The Development and Empirical Testing of a Psychological Detachment and Burnout Structural Model for Academics

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MCOMM (INDUSTRIAL PSYCHOLOGY)

AT

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DECLARATION

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ABSTRACT

The discipline of Industrial Psychology endeavours to enhance the well-being and success of employees; the organisations to which they belong, and society as a whole. In light of such efforts; the issue of *burnout* amongst employees becomes a prevalent and vital phenomenon in which Human Resource practitioners and Industrial Psychologists need to address. Linked to burnout is the phenomenon of psychological detachment. Recent empirical research has shown how psychological detachment, when actively used by the employee, acts as an effective buffer to the harmful effects of burnout. However, a lack of psychological detachment on the part of the employee would allow for the onset of burnout over time. It is in acknowledging and exploring the relationship between burnout and the psychological detachment phenomenon that it becomes imperative to gain insight into the determinants of psychological detachment. Given the vast amount of research confirming high levels of burnout in academics; this study was directed at understanding the factors that influence whether or not the academic employee psychologically detaches themselves from work after the core working hours.

This study made use of an *ex post facto* correlational design with a convenience sample of 148 academic employees who responded to an online questionnaire. The questionnaire utilised empirically sound instruments (the Media and Technology Usage and Attitude Scale, the Segmentation Preferences and Supplies Scale; the Quantitative Workload Inventory; the Developmental Inventory of Sources of Stress; the Occupational Fatigue Exhaustion/Recovery Scale; the Recovery Experience Questionnaire; the State of being Recovered Questionnaire; the Intrinsic Motivation Inventory and the Maslasch Burnout Inventory) to tap in to the constructs underpinning the study's structural model. The results revealed that seven of the twelve paths in the structural model were found to be statistically significant. The results revealed that the variables of recovery, work pressure, work-home segmentation preferences, exhaustion/acute fatigue and technology all have a substantial influence on the psychological detachment, burnout process either as a main, indirect or mediating effect. The results of this study calls for further empirical studies on these variables and the inclusion of other important psychological detachment determinants.

OPSOMMING

Die dissipline van Bedryfsielkunde streef daarna om die welstand en sukses van werknemers, die organisasies waaraan hulle behoort en die samelewing as ‘n geheel, te verbeter. In die lig hiervan word die kwessie van uitbranding by werknemers ‘n opvallende en ernstige fenomeen wat deur menslike hulpbron praktisyns en Bedryfsielkundiges aangespreek moet word. Gekoppel aan uitbranding is die verskynsel van psigiese losmaking. Onlangse empiriese navorsing het getoon hoe psigiese losmaking, wanneer dit aktief deur die werknemer gebruik word, ‘n effektiewe buffer teen die skadelike uitwerking van uitbranding kan wees. Hierteenoor kan ‘n gebrek aan psigiese losmaking by die werknemer oor tyd lei tot die ontwikkeling van uitbranding. In die ondersoek na die verhouding tussen uitbranding en die psigiese losmakingsverskynsel is dit noodsaaklik om die bepalers van psigiese losmaking vas te stel. Na aanleiding van die groot hoeveelheid navorsing watuitbranding in akademici bevestig, was hierdie studie gemik op die begrip van die faktore wat beïnvloed of die akademiese werknemer homself sielkundig losmaak van sy werk buite formele werksure.

Die studie het gebruik gemaak van ‘n *ex post facto* korrelasie ontwerp met ‘n gerieflikheids steekproef van 148 akademiese werknemers wat reageer het op ‘n aanlyn vraelys. Die vraelys het gebruik gemaak van goed gevalideerde instrumente (die *Media and Technology Usage and Attitude Scale,* die *Segmentation Preferences and Supplies Scale;* die *Quantitative Workload Inventory;* die *Developmental Inventory of Sources of Stress;* die *Occupational Fatigue, Exhaustion / Recovery Scale,* die *Recovery Experience Questionnaire;* die *State of Being Recovered Questionnaire;* die *Intrinsic Motivation Inventory* en die *Maslach Burnout Inventory)* om die onderliggende konstrukte strukturele model te ondersoek. Die resultate the getoon dat sewe van die twaalf bane in die strukturele model beduidend was. Die uitslag het getoon dat die verandelikes van herstel, werksdruk, werk-huis-skeidingsvoorkeure, moegheid / akute uitputting en tegnologie ‘n substansiële invloed op die psigiese losmakingsproses het, hetsy as direkte, indirekte of modererende faktor. Die resultate van die studie beklemtoon dat verdere empiriese navorsing nodig is om hierdie veranderlikes, asook ander belangrike psigiese losmakingsfaktore te ondersoek.

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CHAPTER ONE

INTRODUCTION

1.1 The changing nature of the world of work

According to Gereffi, Humphrey, Kaplinsky and Sturgeon (2001), the world's economy is becoming increasingly globalised resulting in strategic organisational changes that will cater to the fast-paced, divisional and global demands. Workplace demographics, technological innovations and global competition are all factors that have added to the imminent pressure placed on organisations to change (Coovert, 1995; Davis, 1995; Howard, 1995). Resultantly, this has meant that organisations have increased in size, diversified their business strategies, have become more divisional; have engaged in mergers and acquisitions; as well as forged new public and private alliances (Mirvis & Hall,1994). It is in responding to such changes that companies are in a continuous state of flux; whether it be in the form of buying and selling off businesses; outsourcing, downsizing, and restructuring themselves (Meyer, Allen & Topolnytsky,1998; Mirvis & Hall,1994). However, it is with the company structure and strategy changes that the employee is expected to change, too. Employees are subsequently expected to be multi-talented and hold vast amounts of working experience; while, in turn, holding less job security than ever before (Mirvis & Hall,1994). Since organisational change is placing enhanced pressure on employees in uncertain times; the psychological well-being of the employee is tested (Mirvis & Hall,1994). This is because the employee can no longer rely on strong and secure relationships with the employer; job security and increased pay (Mirvis & Hall, 1994). However, it is in addressing employee well-being that the solution becomes clear: organisations can create poor employee well-being, but they can also develop and foster it (Grawitch, Gottschalk & Munz, 2006).

According to Sauter, Lim & Murphy (1996, p.250), a successful organisation is one which 'maximizes the integration of worker goals for well-being and company objectives for profitability and productivity'. If this is to be the case, the emphasis is then placed on how organisations would cater for the well-being of their employees. According to Grawitch et al., (2006), there is a global trend towards organisations providing company programmes that are specifically designed to enhance employee health and well-being in order to contribute to the ultimate health of the organisation. According to Aldana (2001, p.129), this is of no surprise since "approximately 90% of organisations with 50 or more employees provide some type of programme designed to promote health". It is found that through investing in such programmes, not only is productivity and profit enhanced, but that there have found to be dramatic decreases in the cost of health care; with enhanced retention of employees due to

the boosting of their morale (Fulmer, Gerhar & Scott, 2003; Pfeffer, 1994). Furthermore, it is in implementing such organisational programmes and practices that the discipline and profession of Human Resources/Industrial Psychology is the organisation's main accomplice in this regard (Grawitch et al., 2006).

The industrial psychologist plays an imperative role through indirectly ensuring organisational sustainability and success through the health and well-being of an organisation's employees. It is these professionals that, through strategic human resource development (SHRD), can prepare organisations to embrace such programmes and practices in order to reap employee job satisfaction, overall well-being and subsequent profits. It is the adding of the "human factor" that will ultimately sustain the organisation in the long haul (Garavan & Mcguire, 2010). Through the industrial psychologist promoting and implementing the human factor through such programmes and practices; employee attraction and belongingness will be fostered (Garavan & Mcguire, 2010). However, there are vast people-industry barriers that challenge business psychology professionals in achieving such outcomes. According to Schaufeli and Buunk (2003) one such challenge has been the prevalence of burnout. Burnout has been recorded as a global employee health and well-being challenge that demands the immediate attention of the Human Resource discipline throughout the world (Schaufeli & Buunk, 2003). Burnout thus presents a direct threat to the organisation's profit-making schemes and ultimate existence.

1.2 Burnout: a threat to organisational sustainability

Burnout can be defined as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind' (Maslach & Jackson, 1986, p.1). *Emotional exhaustion* in the workplace can be the result of the overextension of interpersonal demands and occupational stress, which subjects the individual to the loss of emotional resources. This form of exhaustion can manifest itself through physical, cognitive and emotional fatigue. According to Maslach and Jackson (1986), *Depersonalisation* can be understood as the loss of a personal and humanised perception of the people in which the professionals work with. Finally, it is acknowledged that personal accomplishment would decline with the presence of burnout. Burnout would typically manifest in the tendency to negatively assess work with recipients; while simultaneously anticipating that professional goals are not being met. This would be consequently followed by feelings of lowered self-worth (Schaufeli & Buunk, 2003). According to Els, Mostert and De Beer (2015), burnout can be viewed as a state of mind that would ultimately affect the professional's level of effectiveness, their motivation, and would allow for the development of impaired attitudes and behaviours within the workplace. Essentially, burnout becomes an organisational problem in which the employment environment does not foster a workplace

that, as much as it possibly can, buffers the effects of detrimental levels of burnout (Leiter & Maslach, 2001).

Burnout is a wide-spread phenomenon that has been described as a 'world-wide pandemic'. It is a phenomenon that has drawn major awareness throughout the world and within different people-service professions and disciplines (Schaufeli & Buunk, 2003). According to Schaufeli and Enzmann (1998), an analysis of global job and professional categories that are the most affected by burnout include health professionals (5%); social workers (7%); administration and management (4%); law enforcement (3%), as well as education (27%). Teaching and education has been found, on a global scale, to hold the most burnout risk. However, few studies have focussed on burnout amongst academic staff in higher education institutions (Rothmann & Barkhuizen, 2008). According to Rothmann and Barkhuizen (2008), burnout amongst university faculty staff members has been on the rise and is resultantly reducing the attractiveness of academic careers. Workplace stressors that possibly contribute to the burnout of academics in South Africa include great social inequities and system alterations; students who come from vastly different socio-economic and educational backgrounds; as well as an elevated level of local and global competitive pressures among higher educational institutions (Rothmann & Barkhuizen,2008). This has resulted in a plethora of additional work roles for South African academics; while these employees have simultaneously been dealing with greater resource setbacks.

1.1.3 Academia: burnout amongst academic employees

The demands placed on academics in tertiary education institutions are vast. Demands range from elevated levels of student entries; to the provision of additional academic support to students; as well as enhancing professional research skills in order to embrace competition in the realm of international peer-reviewed articles (the latter of which is related to their attainment of rewards and promotion) (Barkhuizen, Rothmann & Vijver, 2014). It is in the application of the *Job-Demand Resource Model* that it can be argued that the culminating effect of these job demands on academics would have a substantial impact on their job resources (Bakker & Demerouti, 2007). This would ultimately render the employee vulnerable to burnout. Burnout symptoms aggravate over time. Usually it manifests itself in a deterioration of mental and physical health; a sharp decline in motivation and interpersonal relationships (in the workplace and at home); a gradual lack of effectiveness in educating students and engaging in research; as well as enhanced absenteeism levels and, ultimately, experiencing thoughts of leaving the profession (Rothmann & Barkhuizen, 2008).

Burnout in academics has been consistently related to organisational and structural sources of stress. These stressors include high workloads and excessive time pressures; research

demands; the restructuring of tertiary institutions, changing management styles, and a lack of adequate resources (Reddy & Poornima, 2012). Academia has experienced a radical change in the nature of the work that is required (McInnis, 1992). Academic employees also face the pressure of having to produce relevant and useful research (McInnis,1992). Furthermore, the increase in student numbers in South Africa has also raised the need for greater administration capacities and a greater requirement for more post-graduate lecturers. Globalisation has also presented new challenges to lecturers: one of which includes the educating of foreign students. Furthermore, technological advances have also created new demands in terms of how knowledge is transferred to students (Laurillard, 2013).

Aside from the many benefits technology has provided to education, it has also resulted in an ever-rising expectation of the constant availability of academics to fellow colleagues and students (McInnis,1992). The pressure to be constantly available could hold serious implications for the development of burnout. Furthermore, it can be argued that wireless internet and smart-phones have increased the employees' hours of work both in the work environment and at home (Sonnentag & Kruel, 2006). Finally, with a rapid incline of work roles and the use of technology as a continuous source of work communication, time pressures frequently result in working after hours from home (Sonnentag & Kruel, 2006). The academic could thus easily argue that 'they are hardly ever not working' (McInnis, 1992, p.10).

The typical academic personality profile reflects a strong sense of intrinsic motivation and engagement with academia and the corresponding work roles (McInnis, 1992). It could be argued that the changing nature of work, time pressures, technology and natural intrinsic engagement levels of academics could culminate in a predisposition to not sufficiently disconnect from work on a mental and physical level (Sonnentag & Bayer, 2005; Sonnentag & Kruel, 2006). According to Conservation of Resources theory (Hobfoll, 1989), people hold an inherent need to conserve their current resources so as to avoid its depletion (Halbesleben, Neveu, Paustian-Underdahl & Westman,2014).The depletion of a person's resources could be reflected in the development of burnout; while the conservation of their resources could be reflected in the person's ability to mentally distance themselves from their work. There needs to be a physical and mental escape from the day's stressors so that there can be a psychological and physical replenishment of resources for the following work days (Sonnentag & Bayer, 2005). It is in this light that a lack of 'mentally switching off' places the employee at risk of gradually experiencing a decline in their health and well-being. It is therefore vital for academics to experience a "sense of being away from the work situation", otherwise known as *psychological detachment* (Etzion, Eden & Lapidot, 1998). Psychological detachment embodies recovery strategies and engaging in activities that would draw the employee's mind

away from his/her work (Sonnentag & Bayer, 2005). A failure to psychologically detach from work would prevent recovery from the stressors the individual experiences in the work day/week/month/s (Sonnentag & Bayer, 2005). If occupational stress is not limited by the individual through psychological detachment; it would ultimately amount to occupational strain that would affect the academic's health, such as the detrimental physical and mental experience of burnout (Allen, Holland & Reynolds, 2015).

1.1.3 Psychological detachment and recovery: a focal contributor to burnout

Psychological detachment is a focal contributor to the so-called stressor-strain relationship (Els, Mostert & De Beer, 2015). According to Sonnentag & Bayer (2005), psychological detachment, or the act of mentally distancing oneself from work, will allow for the individual to be feel more recovered from the daily stressors he or she experiences at work. Through the individual feeling 'recovered'; he or she would be less likely to experience the phenomenon of burnout. Alternatively, the experience of occupational stress over time, where the individual has not been able to recover from these stressors, would naturally lead to the academic feeling emotionally, cognitively and physically burnt-out (Reddy & Poornima, 2012). It can thus be argued that psychological detachment stimulates the individual's recovery process (it leads to higher self-reported recovery), which would, in turn, buffer the detrimental effects of burnout (Sonnentag & Bayer, 2005). In other words, recovery acts as a mediator between psychological detachment and burnout. Burnout holds greater consequences than just affecting the health of the academic themselves. The organisation of Academia needs to sustain itself. Therefore, there is a vital mission to protect the learning institutions and its students through attempting to understand the factors that determine psychological detachment and ultimately burnout in academics. The variables that affect psychological detachment do not only lie at an individual level, but also at a psycho-social and environment level. Insight into the vital determinants of psychological detachment will provide understandings into how academic organisational environments need to change in order to, directly or indirectly, encourage the psychological detachment of academics.

1.2 The Research Initiating Question

Given the introductory argument, the following research initiating question is formulated:

Why does variance in psychological detachment and ultimately burnout, exist amongst academic employees?

1.3 The Research Objectives

The main aim of this study is to develop a nomological network of variables which explains the factors influencing psychological detachment of academic employees; while also accounting for a significant relationship between psychological detachment and burnout amongst academic employees. If, through statistical analysis, the hypothesised paths in the structural model are deemed significant, the gained insights would prove useful in altering academic work environments to foster psychological detachment and ultimately reduce burnout levels.

The research question was addressed through attempting to achieve the following research objectives:

- developing a structural model which presents the underlying relationship between the determinants of psychological detachment; and psychological detachment to the phenomenon of burnout, and
- testing the fit of the outer and inner model via Partial Least Squares modelling (PLS).

CHAPTER 2
LITERATURE REVIEW

It is largely unclear which factors bring about or hinder the psychological detachment process (Sonnentag & Bayer,2005). In order to address the previously aforementioned research initiating question it becomes imperative to explore the various antecedents and determinants of psychological detachment. Ultimately, such insights will be needed in order to allow for practical responses into minimising burnout through the recovery process.

2.1 Conservation of Resource (COR) Theory

The COR theory has been well received and acknowledged in terms of its ability to provide an integrative foundation to the understanding of burnout as a concept, its determinants and its threat to the well-being of employees (Westman, Hobfoll, Chen, Davidson & Laski,2004). Therefore, this theory can be used as a predominant lens through which this research can be approached. According to Halbesleben et al. (2014), COR theory's basic premise holds that people have a basic orientation to protect their current resources (conservation), as well as gain new resources (acquisition). The resources are in the form of whatever the person values, whether it be objects, states and/ or conditions (Halbesleben et al., 2014). The basic principles of the theory emphasise how the individual holds resource loss to be more salient than that of resource gain, as the loss will be more greatly experienced by the individual. It also emphasises the importance of 'resource investment'- how the individual must make sure to invest in resources so as to ultimately protect themselves, and also gain more resources in the process (Westman et al., 2004). These principles culminate into a number of corollaries.

Firstly, it is believed that the fewer resources the individual has; the more vulnerable the individual. The opposite is also true. Secondly, the theory stresses how the loss of resources can quickly and powerfully culminate into a resource loss cycle in the individual's future. Finally, resource gain can also more easily set in motion and culminate into future resource gain that works to buffer the individual from resource loss (Halbesleben et al., 2014).

It is argued in this research that it is in this application of COR theory that the link between psychological detachment, the recovery process and burnout becomes clear. According to Shirom (1989), burnout can be seen as a negative transaction in which the individual loses valuable resources, which cannot be regained. However, such a transaction can be avoided through the engagement in effective coping mechanisms, which can result in gains that deter resource deterioration (Freedy & Hobfoll, 1994). According to Sonnentag (2012), one such

coping mechanism includes actively engaging in the recovery process where the individual's resources are regained. According to Binnewies et al (2009), the recovery process can be achieved through engaging in leisure activities and experiences. One such experience includes the experiencing of 'psychological detachment'- the experience of mentally distancing oneself from work-related stressors (Binnewies et al., 2009). Psychological detachment is associated with the long-term, sustainable well-being of the employee and thus the recovery and resource replenishment of critical resources to the individual (Sonnentag, 2012). The retention and protection of resources through the recovery process of psychological detachment will act as a buffer to job stressors that ultimately lead to burnout (Els et al., 2015). COR theory can, therefore, provide the framework in which to conceptualise the relationship between psychological detachment, recovery and burnout amongst academic staff.

2.2 Recovery and Burnout

The use of COR sheds light on the relationship between recovery and burnout. Burnout is defined as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind" (Maslach & Jackson, 1986, p.1). According to Maslach and Goldberg (1998), burnout transforms once-enthusiastic employees or professionals into cynical, ineffective and drained individuals who no longer feel they can successfully and effectively participate in the workforce. This phenomenon is found to be increasing amongst academic employees and thus often results in academia, as a professional career, becoming less than appealing (Rothmann & Barkhuizen, 2008).

Burnout can be understood as a resource-loss process; whereby the individual continuously and gradually loses energy resources without actively replacing them over time (Shirom, 1989). However, a strong coping mechanism that overcomes such a phenomenon is through engaging in a recovery process (Binnewies et al., 2009). According to Binnewies et al., (2009) job-related stressors actively consume and deplete an individual's physical and mental resources. The COR theory argues that individuals are driven by the need to restore and protect their resources (Hobfoll, 1989). Naturally, the person turns to the recovery process in order to regain the resources they have lost (Craig & Cooper, 1992). Therefore, recovery can be understood as a process whereby the negative effects of job stressors and demands can be reversed resulting in the individual reverting back to their 'pre-stressor level of functioning' (Binnewies et al., 2009, p.69; Craig & Cooper, 1992). According to Sonnentag and Kruel (2006), an employee should engage in daily activities (after the core work hours) that assist

them in feeling recovered. A sense and feeling of daily recovery[1] is essential in order for the individual to fully and effectively reinvest their resources in the following day of work (Sonnentag & Kruel,2006). In all, the active engagement in the recovery process allows for the individual's energy resources to be replenished (Sonnentag, 2003). In this way the engagement with the recovery process counteracts the experiencing of burnout on a resource-loss; resource-gain basis (Sluiter, Van der Beek & Frings-Dresen, 1999). If the individual were to continue expending their resources during work and not replacing them through recovery after work; there would be an energy - resource imbalance that could culminate into burnout over time (Sluiter et al., 1999). According to Sluiter et al., (1999), studies have consistently shown that individuals that have been unable to engage in the recovery process consistently have experienced increased levels of burnout over time. In other words, it is argued in this study that the more the individual actively engages in the recovery process and therefore reaps the benefits of feeling sufficiently recovered, the less vulnerable the individual will be in experiencing the phenomenon of burnout. Therefore, the following hypothesis is stated:

Hypothesis 1[2]: Recovery has a negative linear relationship with burnout.

Research presents a strong case for a negative linear relationship between recovery and burnout (Binnewies et al., 2009; Craig & Cooper, 1992; Eden,2011; Sluiter et al.,1999). Delving further into the literature begs the question of what constitutes the most effective method for an individual to elicit and engage in the recovery process? According to Eden (2001) and Sonnentag (2001), leisure time has been described as an important way to activate and engage in the recovery process. However, certain activities are more valuable to the recovery process than others (Binnewies et al., 2009). For example, dealing with daily hassles in the home environment and or finishing housework activities during leisure periods can detract from an individual's resources; while engaging in social activities (e.g. spending quality time with friends and family members) and experiences are acknowledged to replenish them (Binnewies et al., 2009). One resource-gaining experience that has been repeatedly highlighted in literature studies is the ability for individuals to mentally detach themselves from work-related issues after their core working hours have been completed (Sonnentag, 2012; Sonnentag & Bayer, 2005; Sonnentag & Kruel, 2006). This mental detachment from work after

[1] A distinction is made in this study between the mechanism through which the individual would come into a state of being recovered (e.g. in this study the psychological detachment process) and the actual feeling of being recovered (as reported in terms of recovery state in the morning). This distinction is important to note, as psychological detachment captures the process that would either lead to being recovered, or not.

[2] Although not stated explicitly in the hypotheses, it is noted that the hypotheses is presented as part of a bigger structural model. The hypotheses could also have reflected this by explicitly stating, "In the proposed Determinants of the Psychological Detachment and Burnout model it is hypothesized that recovery has a negative linear relationship with burnout".

work hours, otherwise known as 'psychological detachment', is acknowledged to be an extremely important predictor of actual recovery (Etzion, Eden, & Lapidot, 1998; Sonnentag & Bayer, 2005). According to Sonnentag and Bayer (2005), the employee is psychologically detached when they are not ruminating about opportunities, challenges and problems within the workplace. Physical absence from work is not beneficial unless the employee is psychologically distancing themselves from his/her work and work environment. Mentally switching off from work in the off-job hours is argued to allow for the sustainable prevention of burnout through eliciting the recovery process (Sonnentag, 2012). Therefore, given these insights; the relationship between the variables of psychological detachment and recovery for the academic employee is clear. That is, it could be argued that the more the academic staff member psychologically detaches from work; the more the employee will experience recovery. The hypothesis below reflects this relationship.

Hypothesis 2: Daily psychological detachment has a positive linear relationship to recovery.

In all, given the theoretical link between psychological detachment, recovery and burnout; the recovery construct can be understood as a mediator between psychological detachment and burnout. In other words; the more the individual experiences psychological detachment; the more recovered he or she will feel. The more recovered the individual feels; the less susceptible he or she will be to experiencing burnout.

According to Sonnentag (2012), more research on predictors of psychological detachment is needed. It is argued here that such determinants should involve a number of environmental, personal and job stressor factors in order to serve a holistic and integrative understanding of the psychological detachment phenomenon amongst academic staff. There has been a vast amount of research that has acknowledged the relevance of technology in terms of its effects on psychological detachment. With rapid technological developments, employees have found themselves increasingly linked to the work office after hours (Derks, van Mierlo & Schmitz, 2014). Some have argued that it is this 'electronic leash' that is preventing psychological detachment from occurring (e.g. Derks et al., 2014). Therefore, technology and various other associated variables need to be explored as vital determinants in investigating the psychological detachment process.

2.3 Technology Use

There is an increasing interest into how computers and communication technologies are facilitating a spill over in, and between, the individual's various work and non-work domains (Chelsey, 2005). Technology enables employees to bring home to work, but also work to home. This has produced relevant implications for the employee in that there is a greater

possibility that the work hours are being extended to home hours. Rather, it is in these situations that the individual should, for the sake of their well-being, mentally disengage from their work so as to replenish their energy for subsequent work days (Sonnentag, 2012). It can also be argued that with the increase in technological developments and its ease of use, there has also been expectations of organisations as to the constant availability of their employees (Derks et al., 2014). It is these expectations that can also lead to employees feeling obliged to respond immediately to work-related demands during the evening hours, weekends, and holidays (Derks et al., 2014). For example, the use of a smartphone has been found to not only increase the probability of employees engaging in work after work hours, but also encouraging them to make work-related issues salient in their home environments (Sonnentag & Kruel, 2006).

According to Derks et al., (2014), employees are struggling to disconnect themselves from the working realm due to the increasingly excessive use of information technologies. Such findings seem to indicate technology as being a strong force behind individuals being unable to mentally and physically distance themselves from the job. According to Sonnnentag (2012), an important factor in facilitating the experience of psychological detachment is the engagement in meaningful off-job activities and/or the engagement with restorative environments. Thus, technology use for work-related matters in the employee's off-job hours can stand to eradicate the presence of such factors. For example, Derks et al., (2014) has found that it is through technology encouraging a persistent need to respond to work-related pressures, that psychological detachment of employees is becoming near impossible. According to Derks et al., (2014, p.78), empirical evidence shows that daily intensive smartphone use for work-related reasons by employees resulted in them being *"*less able to detach*"*. However, it needs to be considered that daily technology use for work-related purposes does not necessarily imply that the employee is unable to psychology detach. Rather, it is argued in this study that it is the *frequency* of which the employee engages in such technology for work purposes that is the key characteristic related to the recovery process. From this we argued that an 'unhealthy' usage of technology within this context will negatively impact the employee's ability to mentally unwind from work and work-related issues. In all, it was proposed that the *daily* and *frequent* use of technology after work hours for intensive work-related issues would ensure that the workplace stressors prolongs, thus "placing demands on the same psycho-physiological systems that were already activated during normal working hours*"* (Derks et al., 2014, p.75). Therefore, since the job stressors will continue to afflict the employee after work hours, it will become increasingly difficult for the individual to psychologically detach (Derks et al., 2014).

For the purposes of this study, technology use was defined as the use of any electronic device/platform, that allows employees to engage in work tasks, activities and issues outside of the work environment. Such forms of technology could include computers, smartphones and tablets, to name a few. It was, therefore, argued in this study that the frequent and daily use of technology for work-related purposes after the core working hours have been completed can thus be considered a determinant of psychological detachment of the employee.

Hypothesis 3: Daily work-related technology usage has a negative linear relationship with daily psychological detachment.

It is through gaining insight into the impact of frequent and daily work-related technology use on psychological detachment that an important moderating variable presents itself. It is argued in this study that the impact of technology use on psychological detachment is influenced by what is commonly known as the individual's work-home segmentation preference.

2.4 Blurred Boundaries and the Work-home Segmentation Preference

Communication technologies have been on the rise in the past ten years resulting in the current workforce being depicted as having an "always on" mentality (Park, Fritz & Jex, 2011). Technology use for work-related matters has been extended into the home after work hours, resulting in employees holding a limited ability to mentally detach themselves from work. According to Sonnentag, Binnewies and Mojza (2008), an individual needs to unwind and recharge in order to meet the work demands and stressors of the subsequent workday. In response to the blurring of work and home domains through technology, individuals can/have embraced active strategies in order to segment their work and non-work roles (Park et al., 2011). It is these strategies of the employee that culminates into their work-home segmentation preference. The *Boundary theory* provides a strong base for which such actions and their resultant outcomes can be understood.

Boundary theory suggests that individuals create their own boundaries (which can be physical, temporal or psychological in nature) in order to deal with the multiple roles that he/she holds in the work and family domains (Park & Jex, 2011). The domains can either be segmented or integrated through using certain individual practices and strategies. Segmentation of the domains would ensure a strong separation/divide between them; while integration would refer to the combining of the various aspects between the domains (Park & Jex, 2011). Therefore, an individual with a higher segmentation preference is more like to develop strong boundaries between work and non-work realms in order to prevent the spill-over from one domain to the

other (Park et al., 2011). Since such boundaries, whether integrated or segmented, are created, distinguished, chosen and implemented by the individual; *work-home segmentation preference* (W-HSP) becomes an appropriate term. In harmony with what has been discussed above, Kreiner (2006, p.486) describes W-HSP as, "the degree to which one prefers to separate various aspects of work and home from each other by creating more or less impermeable boundaries around the work and home domains."

2.4.1 Work- Home Segmentation Preference and Psychological Detachment

In this study it is argued that engaging in a work-home segmentation strategy, as suggested by Kreiner (2006), holds implications for the experiencing of psychological detachment of the individual. If the person were to be high on their segmentation preference (in other words, they chose to create strict boundaries between their work and home life), he or she would be more likely to engage in leisure activities and experiences that allow for them to mentally switch off from their working lives after their core working hours have been completed. In this way, it can be argued that the more the person has a preference for separating their work and home lives; the greater the probability will be that they experience psychological detachment. This argument is reflected in the hypothesis below.

Hypothesis 4: Work - home segmentation preferences has a positive linear relationship with daily psychological detachment.

2.4.2 Work- Home Segmentation Preference and Technology Use

Moreover, segmentation strategies are often used to restrict and monitor technology use after work hours (Park & Jex, 2011). According to Edwards and Rothbard (2000), this can be viewed as a means for individuals to balance their personal and work life. These strategies also hold important implications for employees, such as academic staff, whose home domains are invaded with work demands through technological corridors (Ranjan, 2008). Since technology lends itself to being a strong factor for interrupting non-work activities with work-related issues; creating boundaries around its use could protect the work recovery process through psychological detachment (Barber & Jenkins, 2014). It could subsequently be argued that individuals who hold a strong work-home segmentation preference are more like to mentally distance themselves from work during non-work hours (Park et al., 2011). Individuals who separate their work and home domains will hold fewer expectations, thoughts and worries about work during non-work hours, and will thus resultantly experience higher psychological detachment during non-work time (Park et al., 2011). It is in this regard that it is argued that the work-home segmentation preference of the academic staff member will influence the relationship of technology usage on psychological detachment. That is, it is argued that for two academic employees with similar daily technology use patterns, the reported daily

psychological detachment levels may differ. These differences may be due to differences in work-home segmentation preferences.

Hypothesis 5: Work-home segmentation preference will moderate the relationship between daily work-related technology usage and daily psychological detachment.

When investigating the work situation of academic staff it is apparent that many employees in this industry have the option to engage in flexible working arrangements, so as to cater towards holding a more balanced life and reducing work-life conflicts (McInnis, 1992). It is thus important to consider how flexible work arrangements may encourage work-related technological use in the home domain of the academic staff member.

2.5 Flexible Work Arrangements and Technology Use

According to Kelly and Moen (2007), flexible work arrangements have become great organisational strategies for the attraction and retention of employees. Since flexible work arrangements are designed to challenge work-family conflicts; employees have been found to experience greater enrichment between the work and home domains resulting in greater job satisfaction and lower turnover rates (McNall, Masuda & Nicklin, 2009). However, despite the many benefits of such flexible schedules being available to academic staff; there are noted limitations, too (Kelly & Moen, 2007).

According to McInnis (1992, p.10), much of the work carried out by academic staff is private and unrecognised (due to being carried out in their home environments after hours) and therefore McInnis argue that, 'despite their ability to work flexible hours, their real working week is greater than forty hours'. In other words, academic employees are often having to work far beyond the hours that is formally acknowledged and recognised by the public at large (McInnis, 1992). Furthermore, academics are generally noted for their strong commitment to a strong standard or professional performance (McInnis, 1992). This is supported by the notion that academic employees are known to be intrinsically motivated by their work (Coaldrake & Stedman, 1999). Almer and Kaplan (2000) have argued that employees engaging in flexible arrangement practices can experience pressure to work hours that extend past the traditional working hours, due to the inherent hard-working nature of the employee. Such insights naturally lead to the conclusion that flexible work arrangements, can, in the case of the academic staff member, increase the use of technology in the home domain for work-related matters. Thus, such arrangements feed into the increasing use of technology for work purposes in non-work times, which could ultimately influence the academic employee's level of psychological detachment. In other words, flexible work arrangements do not necessarily

eliminate all work-life conflicts for employees. Furthermore, such arrangements can also lead to employees fearing negative consequences to their career in terms of less/non-visibility (Kelly & Moen, 2007). The employee can typically worry that such arrangements appear to detract from their apparent commitment to the organisation (Kelly & Moen, 2007). This can result in influencing the employee in engaging in more work through technological avenues in the home domain. Therefore, it could be argued that flexible work arrangements, a typical work environment characteristic of an academic employee, may foster work-related technology use in the home domain.

Hypothesis 6: Flexible work arrangements has a positive linear relationship with daily work-related technology use.

Furthermore, an environmental variable that strongly depicts the work reality of an academic employee is that of workload and time pressure (Houston, Meyer & Paewai, 2006). For the sake of this study, both workload and time pressure will be conceptualised together as 'work pressure'. This is because both variables are essentially related to time limits in which the individual feels he/she is unable to work towards (Sonnentag, 2012).

2.6 Work Pressure

According to Barkhuizen et al., (2013), academic employees work in highly demanding work environments which are continuously influenced by the political and economic climates in which they exist. The influx of learners in need of tertiary education and support; as well the international pressure that is exerted in terms of research skills and the completion of publications are just two external factors that have influenced the nature and extent of the academic employees' work demands (Barkhuizen et al., 2013). Research has constantly identified workload and time pressure to be significant job stressors that leads to work-life conflicts which, if not adequately dealt with, leads to inevitable strain for the academic employee (Houston et al., 2006). In the application of COR theory, both workload and time pressures can reduce an individual's resources as it limits opportunities for recovery, thus rendering the employee vulnerable in the long-term.

2.6.1 Work Pressure: Workload and Time Pressure

According to Sonnentag and Bayer (2005), the term 'quantitative workload' refers to a vast amount of work in which the individual does not have the necessary time that is needed to complete the work. This is in line with the understanding that 'workload simply represents the sheer volume of work required of an employee (Spector & Jex, 1988, p.358). Many employees deal with high workloads by working longer hours so as to complete the work in the limited

time slots (Major, Klein & Ehrhart, 2002). Not only are high workload associated with poor well-being and health, it has also been shown to correlate with difficulty in psychologically unwinding after work hours (Sonnentag & Bayer, 2005). According to Geurts and Demerouti (2003), workload is also linked to work-family conflicts. As acknowledged by *Boundary Theory*, higher workload facilitates the spill over between the work and home domains of the individual; with the spill over continuously influencing the individual past the core work hours (Park & Jex, 2011). Resultantly, the individual becomes vulnerable to the lack of adequate psychological detachment from work, during non-work hours. It is in light of the influence of workload on psychological detachment, that two distinctions of workload can be made (Sonnentag & Bayer, 2005). *Chronic workload* refers to a consistent and enduring work that the individual has to encounter every day; while *day-specific workload* refers to the amount of work the individual faces on any particular day (Sonnentag & Bayer, 2005). It is both forms of workload that encourages the individual to take their work home with them, which results in their ultimate failure to detach from work. It is also important to consider that despite the actual workload, the individual who takes a night off from work may struggle to psychologically detach from the amount of work tasks to be faced in the days to follow. The individual can ruminate and worry about the work, and thus also fail to psychologically detach from work-related tasks (Sonnentag & Bayer, 2005). Finally, chronic workload implies extended workload over a period of time which can naturally elicit worrying thoughts of how it is to be accomplished in the near or far future. This too, can make psychological detachment difficult to experience. According to Kinman (1998), a survey of academic employees indicated that the majority of employees worked over 50 hours per week in order to meet the work demands/stressors. This entailed the staff members taking work home on a continuous basis, with resultant reductions to their well-being (Kinman,1998). Moreover, direct time pressure is also recognised as a form of work pressure that has a strong influence on psychological detachment (Sonnentag & Fritz, 2007). Time pressure is a well-known and common job stressor that can be described ‘as having too much to do in too little time’ (Sonnentag, Fritz, Arbeus & Mahn, 2014). Time pressure and high workload seem to have similar effects on the individual in that both are associated with higher activation levels (intense psychological and physiological arousal) that can negatively affect the individual until the end of the day (Baer &Oldham, 2006). It is these high activation levels (such as, for example, heightened cortisol levels resulting in stress) that would prevent the individual from achieving psychological detachment (Brosschot, Pieper & Thayer, 2005). According to Sonnentag and Fritz (2007), both time pressure and heavy workload are considered to be the greatest determinants of individuals reporting low psychological detachment levels from work. Both variables account for significant fluctuations and changes in psychological detachment levels of employees. This argument can be extended to academic staff who quite commonly experience constant time and workload demands (Reddy

& Poornima, 2012). For the purpose of this study, both time pressure and workload has been combined into a single construct – i.e. work pressure. Therefore, the following hypothesis is stated:

Hypothesis 7: Work Pressure has a negative linear relationship with daily psychological detachment.

Through analysing the psychological detachment literature; it becomes apparent to note the importance of internal factors of the individual that may hold an underlying influence on the person's ability to mentally distance themselves from work after the core working hours. Therefore, another component of a more physical and emotional nature presents itself as a direct predictor of psychological detachment.

2.7 Exhaustion/Acute Fatigue

According to Winwood, Lushington and Winefield (2006), exhaustion/acute fatigue can be separated from the burnout construct and be shown to have a separate influencing force on psychological detachment and various other variables. The following section will explore exhaustion's link to psychological detachment, as well as the work pressure construct.

2.7.1 Exhaustion/Acute Fatigue and Psychological Detachment

Research has shown psychological detachment to be a predictor of burnout amongst employees, with emotional exhaustion, as a main element of burnout, being a particularly prevalent outcome (Sonnentag, Fritz, Arbeus & Mahn, 2014). However, according to Sonnentag et al., (2014) exhaustion can also act as a predictor, and not only an outcome of the psychological detachment-burnout relationship. In other words, exhaustion is not only the result of lack of recovery from work-related experiences and undesirable working conditions (Crawford, LePine & Rich, 2010). According to Sonnentag et al., (2014), exhaustion facilitates and encourages negative thinking patterns and actions which further offsets the resource depletion process. According to Maslach, Schaufeli and Leiter (2001, p.399), exhaustion has been described as *"*being overextended and depleted of one's emotional and physical resources*".* Furthermore, people usually experience exhaustion as a result of experiencing high job demands, with it frequently expressing itself in physical, emotional and cognitive forms (Bakker & Demerouti, 2007). In the application of COR theory, exhaustion drains the individual of vital resources; which could possibly lead to further reductions in resources, thus facilitating a cumulative effect of resource depletion that extends over time. Therefore, since exhaustion can stand to deplete an individual's resources over time; it so too can determine an individual's psychological detachment from work-related tasks and issues over time (Sonnentag et al., 2014). There is an inherent logic behind such an argument. However, a term that could more

adequately depict exhaustion as a *determinant* of psychological detachment could be that of 'acute fatigue'.

According to Winwood et al., (2006), the context of such exhaustion that has been depicted above can be best represented through *acute fatigue*. According to Olson (2007), the terms 'exhaustion' and 'fatigue' can be understood synonymously. Acute fatigue can be viewed as an exhaustion that is experienced on a daily basis as a result of daily work pressures (Winwood et al., 2006). Despite there being no formal definition, it is understood as a *"relative 'incapacitation' after work activity"* (Bartley,1957, p.302). Furthermore, this level of fatigue/exhaustion accumulates over time into what is understood as chronic fatigue whereby the individual suffers from reduced interest; commitment and involvement in work activities; with behaviour/action patterns that are deemed ineffective. Chronic fatigue is thus similar to the experience of burnout; yet it does not specifically cater to work that holds high emotional demands (Winwood et al., 2006).

However, the variable of acute fatigue proves to be more useful for the purposes of this study in that it allows for the differentiation between exhaustion as a predictor and as an outcome (a key dimension of the burnout construct). According to Winwood et al., (2006), it is argued that the body/mind is able to sustain an adaptive response to stressful work scenarios. However, this is contingent on whether the employee engages in adequate recovery between sequential episodes of work demands. In other words, central to understanding the development of acute fatigue is analysing the extent to which the individual engages in non-essential; yet pleasurable activities after the core work hours (Winwood et al., 2006). Therefore, the more the individual engages in such activities; the smaller the chance of the individual experiencing the onset and effects of acute fatigue. Occupational induced fatigue *will* accumulate unless there are sufficient opportunities for the employee to recover from mental and physical exertion after the working hours (Sluiter, Croon, Meijman and Frings-Dresen, 2003). Therefore, recovery is essential if the employee is intent on ensuring their exhaustion and fatigue levels do not accumulate into burnout and or chronic fatigue. It is also essential in that, without it, it is more probable that an employee suffering from exhaustion/acute fatigue will be unable to mentally disengage from work during off-job hours. The opposite will also hold true. The need for such recovery periods holds implications as to how exhaustion/acute fatigue should be operationalised. Furthermore, it is important to understand how exhaustion/ acute fatigue influences an academic employee's ability to psychologically detach.

The influence of exhaustion/acute fatigue on psychological detachment levels can be explained as follows: exhausted employees no longer view job stressors as a positive challenge to embrace, but rather a challenge in which they feel they no longer hold adequate

energetic resources to meet. This manifests itself in the form of rumination, continuous worrying and stress in terms of how the work demands shall be met with the limited availability of resources (Sonnentag et al., 2014). The individual thus fails to psychologically detach from the job stressors. Secondly, exhausted individuals claim to suffer from cognitive lethargy, with their levels of memory, insight and action being radically reduced in the state of exhaustion (Schmidt, Neubach & Heuer, 2007; Van Der Linden, Keijsers, Eling & van Schaijk, 2005). Such reductions often result in poor performance on the part of the employee (Taris, 2006). Poor performances may accumulate and fail to be corrected over time, as the exhausted individual is unable to find the energy or the time to compensate or fix performance deficits (Sonnentag et al., 2014). The exhausted individual may also continue to worry about the mistakes that they are making with regards to their work tasks; which further discourages them to psychologically detach from work. Thirdly, exhausted employees are found to experience a decline in their self-control abilities. Therefore, these individuals would find it harder to adjust their emotions and thoughts accordingly (Bolton, Harvey, Grawitch & Barber, 2012). Resultantly, the exhausted employee would, for example, not be able to redirect their work-related thoughts to various other non-work issues in which they would more easily be able to experience psychological detachment (Van Der Linden et al., 2005). It is for these very reasons that the exhausted/fatigued employee would struggle to psychologically detach from work-related issues. This logic is reflected in the hypothesis presented below.

Hypothesis 8: Exhaustion/acute fatigue has a negative linear relationship with daily psychological detachment.

Research has also indicated the influence of work pressure on the construct of acute fatigue/ exhaustion (Sonnentag et al., 2014). The following section will delve into how work pressure directly affects an individual's level of exhaustion. Work pressure will also be explored as a possible moderator in the exhaustion/acute fatigue and psychological detachment causal relationship.

2.7.2 Exhaustion/Acute Fatigue and Work Pressure

According to Winwood et al., (2006), the experiencing of daily work pressures, in the form of both workload and time pressures, can lead to an exhaustion that is experienced on a daily basis (acute fatigue). Acute fatigue can be understood as a more regular and daily sense of exhaustion that is experienced as a result of daily work pressures (Winwood et al., 2006). The link between work pressure and acute fatigue makes logical sense since the more strenuous the work day is for the individual (for example, he/she experiences a great deal of deadlines and time pressures), the less energy he/she would have to expend in their after-work hours. The opposite would also be true. This notion is substantiated by Akerstedt, Fredlund, Gillberg

and Jansson (2002) where work pressure and its related stressors were found to not only have a direct effect on an employee's daily fatigue levels but also interfered with their daily sleep quality. This suggests an accumulation of acute fatigue being passed from one day to the next, with continuous work pressures aggravating the individual's exhaustion. On this basis, it was proposed that the more work pressure an individual experiences; the more the individual will experience acute fatigue.

Hypothesis 9: Work pressure has a positive linear relationship with exhaustion/acute fatigue.

Moreover, it has been argued that job stressors such as time pressures, along with a high workload, detracts from the possibility of an employee experiencing psychological detachment (Siltaloppi, Kinnunen & Feldt, 2009). According to Baer and Oldham (2006) time pressure elicits physiological and psychological activation that remains with the individual after the traditional core work hours). The presence of high workloads also has a similar effect. A study by Lundberg and Frankenhaeuser (1999) focused on workload and its physiological effects. The empirical results of the study concluded that employees showed higher levels of the hormone and neurotransmitter, Norpinephrine, in off-job hours when workload was high in contrast to when it was low. It is this ongoing stimulation that naturally prevents the individual from mentally unwinding after the work hours (Brosschot et al., 2005). As depicted within the theoretical foundation of COR theory, exhausted employees feel they do not have sufficient resources to match the job demands/stressors (Sonnentag et al., 2014). It is argued in this study that this would especially be in the case of great time pressure and high workloads (i.e. high work pressure). The effects of both time pressure and high workloads has a dreary effect on the employee in terms of continuous activation levels of stress, and a fear that he/she will be unable to meet the work deadlines. Resultantly, exhausted employees with great time pressures and high workloads will find it difficult to psychologically detach. However, it is argued in this study that the effect of exhaustion/acute fatigue on daily psychological detachment is moderated by work pressure. That is, work pressure may act as an amplifying factor in the exhaustion/acute fatigue, daily psychological detachment, relationship.

Hypothesis 10: Work pressure moderates the relationship between exhaustion/acute fatigue and daily psychological detachment.

Furthermore, it is through gaining insight through various studies that a typical personality profile type of the academic employee emerges. One such personality characteristic prescribed to the academic employee needs to be considered in light of its relationship to psychological detachment.

2.8 Intrinsic Motivation

According to numerous literature; the academic employee tends to hold the personality characteristic of intrinsic motivation (Kinman, 1998; Barkhuizen et al., 2014). Intrinsic motivation and its link to psychological detachment and the construct of technology usage will be explored in this section.

2.8.1 Intrinsic Motivation and Psychological Detachment

Motivation is an important human behaviour phenomenon that has captured the attention of researchers within the discipline of Psychology (Grant, 2008). It can be best understood as a compelling psychological force in which one is 'moved to do something' (Ryan & Deci, 2000, p.54). It can also be described as 'psychological processes that direct, energize and sustain action (Latham & Pinder, 2005, p.485). Furthermore, Self-determination theory provides a backdrop in which to differentiate between different types of motivation; namely that of *intrinsic* and *extrinsic* motivation (Ryan &Deci, 2000). According to the theory, three psychological needs are claimed to be universally found within humans - the need for relatedness, autonomy and control. It is these needs that hold a fundamental influence in the motivation of an individual. Subsequently, it is the energisation of behaviour in the search for satisfying such needs that has been named *intrinsic motivation* (Cresswell & Eklund, 2005).

According to Ryan and Deci (2000), intrinsic motivation reflects an innate need to experience challenges and novelties, to enhance one's capacities, as well as to engage in the act of discovery and learning. Intrinsic motivation can be formally referred to as "doing an activity for itself, and the pleasure and satisfaction derived from participation" (Deci,1975, p.80). Intrinsic motivation forms part of a hedonistic perspective where instigators of effort are in the form of pleasure and enjoyment (Grant, 2008). According to Ryan and Deci (2000, p.56), this hedonistic perspective reflects itself through the fact that the individual engages in an "activity for its inherent satisfactions" rather than for the outcome of the activity itself. Furthermore, it is in adding to the novelty of intrinsic motivation that the psychological phenomenon is found to strengthen/moderate relationships of v/arious variables (such as prosocial motivations) to productivity levels. In other words, it has been found that intrinsic motivation within the individual can potentially enhance the level and amount of work that is produced by the employee (Grant, 2008). It is through such insights into intrinsic motivation that the academic employee's level of psychological detachment may be better understood.

There is much literature that presents a dual picture about the academic employee. In the midst of such employees complaining about various stressors and strains related to their profession and jobs; there is also found to be a large degree of satisfaction gained through being intrinsically motivated towards their jobs (Barkhuizen et al., 2014). According to Kinman

(1998), many academics are highly engaged in their work tasks and derive meaningful challenges, as well as identities from their work. It has often been found to be the case that academics can express dissatisfaction in terms of high levels of job-related stress and the various extrinsic aspects that form part of their jobs, such as pay and promotion (Kacmar & Ferris, 1989). However, according to evidence, overall satisfaction with their job does not seem to dwindle (Kacmar & Ferris, 1989) even in the presence of job-stress and dissatisfaction with extrinsic aspects. University faculty research has been shown to support such notions (Kinman, 1998). For example, a particular research study found that while most of the academic employees in the study were experiencing high workloads and burnout levels; 40% of the staff members claimed their work to be intrinsically motivating and enjoyable as a whole (Doyle & Hind, 1998). According to Deci and Ryan (1985), academic employees may feel this way (despite high burnout levels) because their academic roles cater to their own unique psychological and innate needs of determination and competence. Another study found that in a sample of academic employees; whilst claiming to be experiencing role overloads and overwhelming workloads, most still indicated that their careers were progressing as well as what they had thought it would (Lease, 1999).

Despite research focussing on the levels of intrinsic motivation that characterises the academic employee; there is much less research in terms of this variable's link to psychological detachment. However, arguing that such a link does exist, makes viable sense. It is argued in this study that the more the academic employee is intrinsically motivated towards engaging in their work-related tasks; regardless of the associated job stressors; the less the employee would be able to draw themselves from their work and mentally unwind. Therefore, in the case of the academic employee, it can be argued that the higher their intrinsic motivation towards their job; the lower their level of experienced psychological detachment.

Hypothesis 11: Intrinsic motivation has a negative linear relationship with daily psychological detachment.

2.8.2 Intrinsic Motivation and Technology

Intrinsic motivation has been found to moderate employee output/productivity levels within the workplace (Grant, 2008). Given this, it would make sense to explore employee's use of technology in strengthening/enhancing their productivity levels. According to Davis, Bagozzi and Warshaw (1992), there is plenty of empirical and theoretical proof of how intrinsic motivation plays an important role on frequent technology use within the workplace. According to Venkatesh (2000), 'computer playfulness' becomes a relevant term in linking intrinsic motivation to, say, using computers. An intrinsically motivated person, when engaging in their work task, will show greater levels of such 'playfulness', which ultimately represents the desire

for exploration, discovery and fun. Challenge and curiosity is also stimulated through engaging in such technologies (Venkatesh, 2000). Through extending the logic of computer 'playfulness'; this could surely be applied to various other technological devices and platforms, too. It is this playfulness that is related to intrinsic motivation and in which ultimately increases the chance of such individuals engaging in varied technologies on a more frequent basis (Venkatesh, 2000). These understandings can be applied to the realm of academia and academic employees. Technological advances and the increasing organisational investment in such technologies has meant that turning to technology in order to be productive on the job is commonplace (Venkatesh, 2000). The use of technologies in getting the work done also applies to tertiary institutions (Coaldrake & Stedman, 1999). Therefore, given the expanding use of technology within academia and the intrinsic motivation levels of academic employees; it is argued in this study that technology is most likely to be used in the engaging and completion of work activities. There is an inherent logic to this argument too. That is, the more intrinsically motivated the academic employee is; the more he or she will work after their core working hours have been completed, if the required work has not been completed in the core working hours. This will naturally lead to the employee more frequently engaging in technologies to get the work done. Moreover, the academic employee may turn to a broader variety of technology to get the work done in their home environments (other than just using the computer in the workplace). Therefore, it can subsequently be argued that an academic staff member who is intrinsically motivated will most likely make more frequent use of technology to complete work tasks.

Hypothesis 12: Intrinsic motivation has a positive linear relationship with daily work-related technology use.

2.9 Summary

All of the hypotheses listed in this section is contained in the structural model that was developed for the purposes of this study (figure 3.1). The *Determinants of Psychological Detachment and Burnout model*, depicted in figure 3.1, posits a number of plausible determinants of psychological detachment that could unlock a number of answers as to the appropriate organisational response to reducing burnout levels amongst academic staff members, as well as the employee in general. This model was empirically tested in this research. The research methodology that were utilised to do so, is described in the next chapter.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

This study intended to test various variables contained in a complex nomological network, depicted by the *Determinants of the psychological detachment and burnout structural model*, that play a role in the underpinning of psychological detachment, and ultimately burnout amongst academic employees. According to Kothari (2004), in order to arrive at a plausible and credible verdict on the fit of the explanatory structural model the methodology of the research is key. It is through the methodology that the epistemic ideal of science may be served (Theron, 2009), that is that valid conclusions are reached as to the focus of this particular study: psychological detachment, its determinants and its ultimate link to burnout. The methodology section should emphasise the research areas which pose potential threats to the validity of the study's conclusions, so as to allow other researchers to scrutinise the success and failures of any given research direction and processes (Kothari, 2004). Given the value and emphasis of research methodology, the following sections aim to achieve such expectations.

The research initiating question for this study was: *why does variance in psychological detachment, and ultimately burnout, exist amongst academic employees*? In response to this study's research initiating question chapter 2 presented a literature review which focussed on the discussion of relevant constructs and their relationships to each other. This chapter will present the research methodology of the study. Therefore, the purpose and aim of the study will be presented, followed by a discussion by the research objectives, hypotheses and research design. This will then be followed by a discussion on how the various constructs presented in chapter 2 were operationalised. Finally, the psychometric properties of these instruments will be presented and analysed.

3.2 Research Purpose

Burnout is a phenomenon that is increasingly being experienced by academic staff members in tertiary institutions (McInnis, 1992; Reddy & Poornima, 2012). However, psychological detachment has been shown to reduce the presence and experience of burnout amongst employees (Etzion, Eden & Lapidot, 1998; Sonnentag & Bayer, 2005). This study argued that when psychological detachment is actively utilised by academic employees after their core work hours have been completed, physical and psychological resources are replenished. This replenishment would naturally allow active and enthusiastic engagement in work activities the subsequent day. However, a failure to psychologically detach over time results in the depletion

of such resources which would ultimately culminate in experiencing burnout (Sonnentag & Bayer, 2005).

This study therefore focussed on a selection of factors, which could ultimately influence or determine whether an academic employee utilises psychological detachment methods. If these determinants were to be identified and understood, the academic employee's work environment could be modified in such a way as to encourage and foster psychological detachment as a coping resource after the core work hours have been completed, in order to positively influence recovery, and ultimately lessen the development of burnout over time.

3.3 Research aim, question and objectives

The main aim of this study was to develop and empirically test a structural model that identified possible determinants of psychological detachment and delineated the relationships and linkages between them; while also verifying the influence of the psychological detachment phenomenon on burnout.

Therefore, the research initiating question for this study was: *why does variance in psychological detachment, and ultimately burnout, exist amongst academic employees*? The research question(s) was addressed through attempting to achieve the following research objectives:

- developing a structural model which presents the underlying relationship between the determinants of psychological detachment; and psychological detachment to the phenomenon of burnout, and
- testing the fit of the outer and inner model via Partial Least Squares modelling (PLS).

The *Determinants of the Psychological Detachment and Burnout Structural Model* is depicted in figure 3.1.

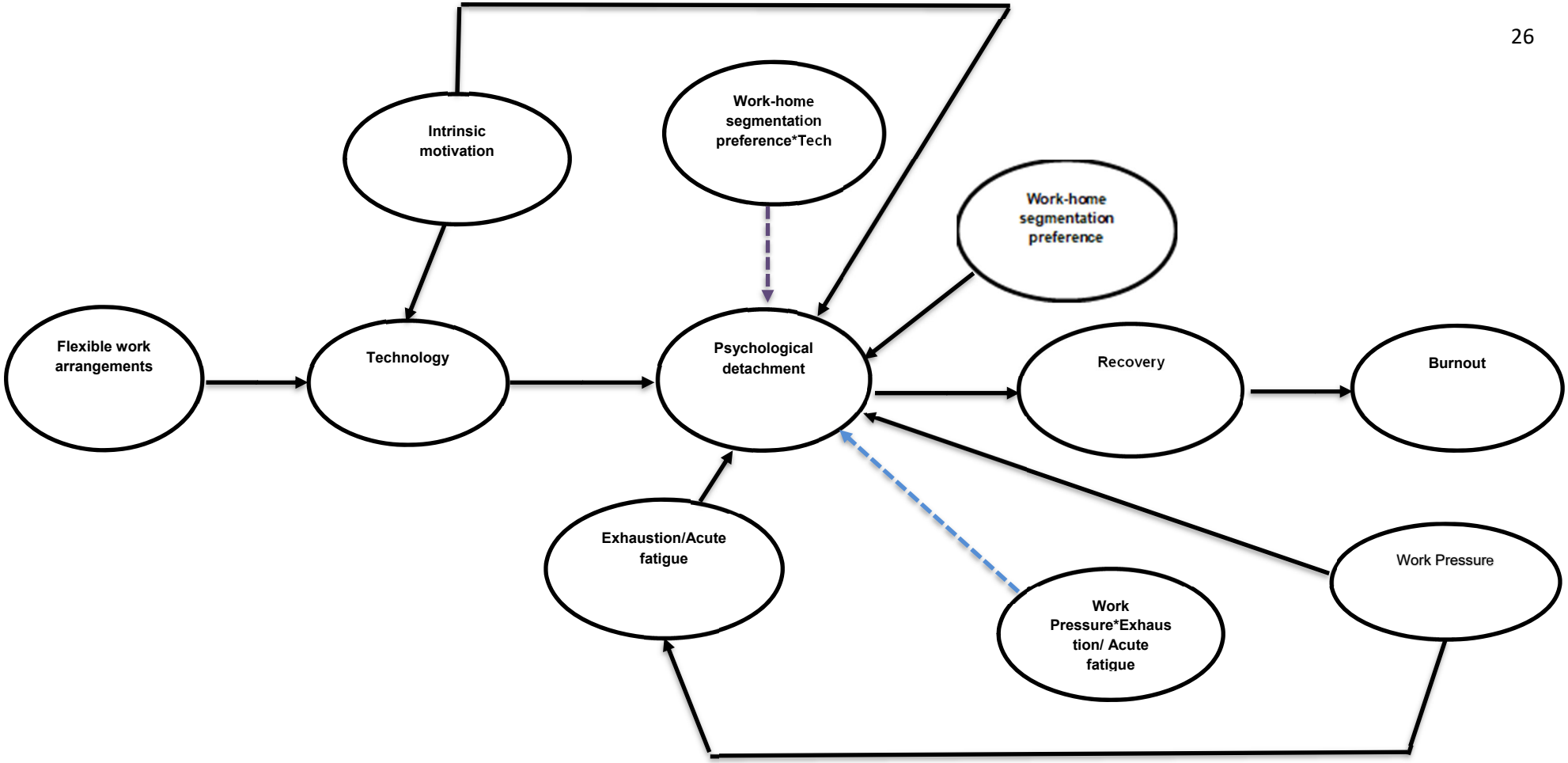

Figure 3.1: The Determinants of Psychological Detachment and Burnout Structural Model

3.4 Research Hypotheses

The overarching notion of this study is that the structural model depicted in figure 3.1 provides a valid account of the psychological process that determines variance in psychological detachment, and ultimately burnout, of academic employees.

Therefore, the following twelve research hypotheses were developed, describing the structural model:

Hypothesis 1: Recovery has a negative linear relationship with burnout.

Hypothesis 2: Daily psychological detachment has a positive linear relationship with recovery.

Hypothesis 3: Daily work-related technology use has a negative linear relationship with daily psychological detachment.

Hypothesis 4: Work - home segmentation preferences has a positive linear relationship with daily psychological detachment.

Hypothesis 5: Work-home segmentation preference will moderate the relationship between daily work-related technology usage and daily psychological detachment.

Hypothesis 6: Flexible work arrangements has a positive linear relationship with daily work-related technology use.

Hypothesis 7: Work Pressure has a negative linear relationship with daily psychological detachment.

Hypothesis 8: Exhaustion/acute fatigue has a negative linear relationship with daily psychological detachment levels.

Hypothesis 9: Work pressure has a positive linear relationship with exhaustion/acute fatigue.

Hypothesis 10: Work pressure moderates the relationship between exhaustion/acute fatigue and daily psychological detachment.

Hypothesis 11: Intrinsic motivation has a negative linear relationship with daily psychological detachment.

Hypothesis 12: Intrinsic motivation has a positive linear relationship with daily work-related technology use.

3.5 Research Design and Procedure

The research design, sample characteristics and ethical considerations will be discussed in the following section.

3.5.1 Research Design

According to Bryman (2008, p.45), the research design provides an essential guide to the execution of a research method and the analysis of subsequent data. The research design does not only assist the researcher to acquire needed answers to the research initiating

question, but it also ensures the management of variance and error (Kothari, 2004). This will prevent the gathering of ambiguous empirical evidence that misleads the researcher and the discipline at large (Kothari, 2004). Therefore, the research design for this study should control variance so that the effects of the determinants on psychological detachment, and its subsequent effect on burnout, can be distinguished from other factors that may be influencing psychological detachment and the burnout construct.

The *Determinants of Psychological Detachment and Burnout Structural Model* (figure 3.1) proposed a number of antecedents to psychological detachment, and ultimately burnout, that needed to be explored. These relationships were examined using an *ex post facto* correlational design since experimental manipulation of the proposed variables was not possible. Disadvantages of this design is that it does not allow for the controlling of peripheral variables that could cause variance, as well as that it does not allow for the random assignment of subjects to treatments. This results in the researcher being limited in their ability to generalise the findings (Simon & Goes, 2013). However, since *ex post facto* research is a means of identifying plausible antecedents of events that have already happened the design reduces the time that is involved in conducting the study in comparison to experimental designs (Simon & Goes, 2013).

3.5.2 Sampling Design, data collection and ethical considerations

In this study the units of analyses were academic staff members who were employed at a higher education institution in the Western Cape. An inclusion criterion for participation related to the number of years an individual has been an academic employee in the particular tertiary institution. Academic employees must have engaged in tertiary work for no less than one full year at the participating institution in order to have taken part in this study. It was argued that this may increase the probability that the theoretical constructs that underpin this structural model (e.g. burnout) have a greater chance of being empirically explicated.

A non-probability sample, obtained through convenience sampling, was utilised. A sample of 148 academic employees from various faculties and departments within the participating university were obtained. Data collection was conducted online. Through utilising an online survey platform, academic employees at the participating university received e-mails encouraging and reminding them to participate in the study. The online platform allowed for the identities of the participants to remain anonymous; while serving as a convenient platform with which to collect and assess the growing sample size. In total, 653 email invitations were distributed. A total of 158 responses were obtained (which reflects a response rate of 24.1%). However, only 148 responses were suitable for use in this study.

The process of gaining ethical clearance for the study preceded the data collection. Permission was obtained from the institution's Research Ethics Committee (Humanities) and Departmental Ethics Screening Committee to continue with the study (see Appendix A for the Research Ethics clearance letter). Participants of the study were ensured that their identities would remain anonymous through the use of the online data collection system and that all data would remain strictly confidential. The informed consent form (Appendix B) was made available to the participants once they had clicked on the provided link to the questionnaire. The online questionnaire required the participants to explicitly answer whether they consented to participate in the study or not, before they were able to access the survey. The informed consent form provided participants with information on the purpose of the study, the procedures of participating, potential risks and discomforts, potential benefits to subjects and/or society, how confidentiality would be maintained, their ability to participate or withdraw at any given time, the names and numbers of the researchers, and their rights with regards to being research subjects (Appendix B contains a copy of the informed consent form).

3.5.3 Sample Characteristics

The total sample consisted of 148 academic employees employed at a university in the Western Cape. The participants of the sample were from various faculties including: Medicine and Health Sciences (29.7%), Arts and Social Sciences (20.9%), Economic and Management Sciences (20.3%), Education (4.7%), Law (1.4%), Agrisciences (8.8%), Science (7.4%) and Engineering (6.8%). Of the total sample 45.9% were lecturers, 18.9% were senior lecturers, 12.2% were Professors and 9.5% were Associate Professors. The remainder of the sample consisted of junior lecturers, contract researchers, and research assistants (see table 3.5).

Tables 3.1 and 3.2 show the age and gender distributions of the academic employees who participated in this study. As can be seen below, 98% of respondents were female. Furthermore, as stipulated by the data collection requirements, all respondents held a minimum of one-year length of service at the participating university.

Table 3.1

Age

	N	Minimum	Maximum	Mean	Std. Deviation
Age	148	24	64	43.33	10.210
Valid N (Listwise)	148				

Table 3.2

Gender

Gender	Frequency	Percent
Female	145	98
Male	3	1.4
Total	148	100

Tables 3.3, 3.4 and 3.5 reflect the respondents' job titles, highest qualifications and relationship status, respectively. Most of the participants were lecturers (45.9%) and senior lecturers (18.9%); with most having completed their PHD (54.1%) and Master's degrees (29.2%). Furthermore, almost two thirds of the sample reported being married (63.5%), while 23% were single.

Table 3.3

Job Title

	Frequency	Percent
Junior Lecturer	8	5.4
Lecturer	68	45.9
Senior Lecturer	28	18.9
Associate Professor	14	9.5
Professor	18	12.2
Contract Researcher	7	4.7
Research Assistant	6	4.1
Post-Doctorate	0	0
Other	4	2.7
Total	**148**	**100**

Table 3.4

Highest Qualification

	Frequency	Percent
Lower than Grade 10 (Std 8)	0	0
Grade 10 (Std 8)	0	0
Grade 12/ Matric	0	0
Post-matric certificate	0	0
Diploma	0	0
Undergraduate Degree	3	2
Post-graduate Degree	1	7
Post-graduate: Honours	6	4.1
Post-graduate: Masters	58	29.2
Post-graduate: PHD	80	54.1
Total	**148**	**100**

Table 3.5

Relationship Status

	Frequency	Percent
Single	34	23
Married	94	63.5
Divorced	8	5.4
Separated	1	7
Widowed	1	7
Living together	9	6.1
Total	**148**	**100**

Tables 3.6 and 3.7 indicate the first and second languages of the academic employees. The data revealed that 59.5% of the respondents indicated Afrikaans as a first language.

Table 3.6

First Language

	Frequency	Percent
Afrikaans	88	59.5
English	46	31.1
Xhosa	2	1.4
Vendu	0	0
Zulu	0	0
Ndebele	0	0
South Sotho	0	0
North Sotho	0	0
Tsonga	1	0.7
Tswana	0	0
Other	11	7.4
Total	**148**	**100**

Table 3.7

Second Language

	Frequency	Percent
Afrikaans	42	28.4
English	98	66.2
Xhosa	0	0
Vendu	0	0
Zulu	0	0
Ndebele	0	0
South Sotho	0	0
North Sotho	0	0
Tsonga	0	0
Tswana	0	0
Other	8	5.4
Total	**148**	**100**

Table 3.10 reflects the ethnic groups of the academic employees that participated in the study. The data revealed that most of the respondents were White (78.4%).

Table 3.8

Ethnic Group

	Frequency	Percent
Black (African)	6	4.1
Coloured	23	15.1
White	116	78.4
Indian	1	7
Other	1	7
Total	**148**	**100**

3.5.5 Statistical Analysis

The following sections will discuss the data analysis techniques that was used to assess the research hypotheses.

3.5.2.1 Missing Values

It is very important to consider the most effective strategy for missing values in order to prevent the study's credibility being diminished through "biased estimates, distorted statistical power and invalid conclusions" (ACock, 2005, p.1012). Missing values are to be expected as respondents may purposefully or accidentally fail to respond to all items in the given questionnaire or may have simply dropped out of the study all together. However, there are a number of traditional approaches that can be used in order to deal with missing values (ACock, 2005). These include pairwise deletion, list wise/case deletion, indicator variable adjustment, mean substitution and imputation by matching (ACock, 2005). The approach that is chosen largely depends on the amount of missing values; the nature of the missing values and lastly, whether the data reflects a multivariate normal distribution.

Since this study attained a small number of missing values (255, only 1.5% of the total responses) and the multivariate normality assumption was not met; the chosen approach for dealing with missing values was imputation by matching[3]. According to Lacus and Porro (2007), imputation by matching requires the researcher to identify observations that come from different sources that can be deemed as similar to one another. Missing values are thus replaced with actual values on the basis of these similar response patterns (Enders & Bandalos, 2001).

[3] This process is discussed in greater detail in section 3.6.2

3.5.5.2 Item Analysis

Item analysis was conducted on each of the measurement instruments utilised in this study, prior to testing the structural model with Partial Least Squares (PLS) modelling. The internal consistency of the participants' responses to measurement items was assessed through using a separate item analysis procedure with SPSS (IBM Corp, 2013) for each instrument. Item analysis provides a means to assess the reliability of the measurement instrument through identifying items that are deemed 'poor' and that do not contribute to the internal consistency of the scale. The *Cronbach Alpha if item is deleted* and the *inter-item correlations,* as well as *the squared multiple correlation* for a particular item within the scale were the item statistics that were used to determine if an item should be flagged as a potentially poor item. The item analysis results, together with the results of the particular individual instrument CFAs (and Exploratory Factor Analysis if necessary), were used to decide whether a problematic item/s should be deleted or not. According to Nunnally and Bernstein (1994), a Cronbach Alpha (internal consistency) coefficient of 0.70 is deemed acceptable. SPSS version 25.0 was used to perform the item analysis. In all, items were removed on the basis of being identified and flagged as poor items from the combined analysis of the item analysis, CFA and (where necessary) the Exploratory Factor Analysis (EFA) results. Once the necessary items were removed from the scales the PLS model was fitted to this revised data set (i.e. the data set in which the problematic items were deleted).

3.5.5.3 Confirmatory Factor Analysis (CFA)

Item analysis results were supplemented by CFA results in order to identify potentially weak items, as well as to inspect the validity of the measurement instruments. According to Kline (2010), CFA determines whether the data can be fitted to the measurement model and whether this fit can be considered strong. The goal of CFA is to assess whether the indicator variables successfully measure and operationalise the latent construct they initially set out to represent. Without successful operationalising of the latent constructs; the interpretation of the comprehensive PLS estimates will hold no empirical weight.

According to Williams, Brown and Onsman (2010) one of the main uses of CFA is to provide evidence of the construct validity of self-report measurement instruments. Another form of factor analysis is EFA. Typically, this analysis is performed prior to CFA in order to determine the underlying factor structure of an instrument. EFA is typically used to investigate the factor structure of a newly developed measurement instrument. However, for the purposes of this study, individual CFAs were conducted for every measurement instrument (which have all been previously empirically evaluated) and EFAs were only performed when the CFA results proved to be disconcerting.

According to Beauducel and Herzberg (2006) CFAs and Structural Equation Modeling (SEM) procedures commonly make use of the maximum likelihood estimation. The maximum likelihood estimation requires certain assumptions to be met (Babakus, Ferguson & Joreskog, 1987). One such requirement includes the necessity of working with a large sample. This study aimed to achieve this assumption and obtained a sample size of 148. Secondly, maximum likelihood estimation requires the assessment of continuous data rather than ordinal data. Therefore, when conducting the CFAs for this study the measurement instrument's items were specified to be continuous. The final assumption requires that the indicator variables follow a multivariate normal distribution (Beauducel & Herzberg, 2006). In order to achieve the latter assumption, the normality of all the measurement instrument's subscales' observed variables were analysed. If the multivariate normality assumption was met maximum likelihood estimation was utilised. However, if the normality assumption was not met and had to be rejected; Robust Maximum Likelihood (RML) estimation was used. When assessing each instrument and its subscales indicator variables for normality, it was found that not one scale met this assumption. Therefore, the study made use of robust maximum likelihood in every instance.

The CFAs[4] were conducted using LISREL 8.8 (Jöreskog & Sörbom, 1998). The covariance matrix was analysed in order to fit the measurement model. It is important to note that if the measurement model provided an exact account of the observed covariance matrix; the exact null-hypothesis would have had to be accepted (H01: RMSEA=0; Ha1: RMSEA>0). However, if the measurement model only provided an estimated account of the observed covariance matrix; the close fit null-hypothesis would have been accepted (H01: RMSEA ≤ 0.05; Ha1: RMSEA >0.05).

Moreover, in order to determine the CFA results; goodness-of-fit (GOF) statistics were assessed. The relevant indices of the GOF statistics for this particular study included the Satorra-Bentler chi-square, the standardised Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Non-Normed Fit Index (NNFI), and the Standardised Root Mean Residual (SRMR). According to Hair, Black, Babin, Anderson and Tatham (2006) the suggested cut-off scores for the GOF indices can be determined by model characteristics such as sample size, as well as the number of observed variables for each of

[4] CFAs were performed on all the instruments of this study, excluding that of the Recovery Experience Questionnaire and the State of being Recovered Scale on the basis that they only had 4 items each.

the instruments. Table 3.9 provides the applicable cut-off values that was used to analyse the GOF indices obtained in the CFA results on the basis that the sample size was below 250.

Table 3.9.

Suggested cut-off values of fit indices demonstrating Goodness-of-Fit given differential model complexity

	N<250		
GOF statistics	**m ≤ 12**	**12 < m < 30**	**m ≥ 30**
CFI/NNFI	>.97	>.95	>.92
SRMR	Could be biased upward, use other indices	≤ .08	<.09
RMSEA	<.08	<.08	<.08
Models in this study that comply with the different criterion	MTUAS WHSP WFC WP OFER PD RECOV	IMI MBI	

Note: m = number of observed variables; N applies to number of observations per group when applying CFA to multiple groups simultaneously; CFI = comparative fit index; NNFI = non-normed fit index; MTUAS = Media and Technology Usage Attitude Scale: WHSP = Work-home Segmentation Preferences; WFC = Work-Family Culture Scale; WP= Work Pressure Scale; OFER=Occupational Fatigue Exhaustion/Recovery Scale; PD= The Recovery Experience Questionnaire; RECOV= Recovery Scale; IMI= Intrinsic Motivation Inventory; MBI= Maslach Burnout Inventory

(Hair et al. 2006)

Satorra – Bentler scaled chi-square: this statistic is calculated in cases of non-normality where robust maximum has been utilized. According to Satorra and Bentler (2001), S-Bχ2 enables the normal chi-square statistic to be divided by a scaling correction in order to better estimate the chi-square in cases of data that follows a non-normal distribution. Since the data of this study for all the individual measurement models for every instrument that was tested did not achieve multivariate normality, the S-Bχ2 provided an improved estimate on the fit of the model.

Standardised root mean residual (SRMR): According to Chen (2007, p.465), the SRMR can be described as the "index of the average of standardized residuals between the observed and the hypothesized covariance matrices". According to Kline (2011), an SRMR that produces a value of 0.10 represents acceptable fit; while a value lower than 0.05 can be considered indicative of good fit. However, according to the Hair et al., (2006) guidelines found in table 3.9 a cut-off value of 0.08 is generally acceptable for a study that has a sample size that is less than 250, and which utilises between 12 and 30 indicator variables.

The Root Mean Square Error of Approximation (RMSEA): The RMSEA is a goodness of fit statistic that assesses not only how well the model fits the study's sample, but also the wider population. Through the RMSEA analyzing the inconsistency between the model that has

been hypothesized and the population covariance matrix; the issue of sample size is avoided (Hooper, Coughlan, & Mullen, 2008). According to Brown (2015), the range of the RMSEA is from 0 to 1. Better model fit is indicated by smaller values (values of 0.60 or less). However, this study will make use of the cut-off value suggested by Hair et al. (2006), where a value of 0.80 reflects acceptable fit; while a value of 0.50 or less is indicative of good fit.

Comparative fit index (CFI) and non-normed fit index (NNFI): These indices reflect good fit when their values are closest to 1.00. As noted in table 3.9, CFI and NNFI values of 0.95 are a solid indication that there is a good model fit in a sample size that is less than 250 and when there are between 12 and 30 indicator variables (Hair et al*.,* 2006).

3.5.5.4 Exploratory Factor Analysis (EFA)

According to Williams, Onsman and Brown (2010, p.2), the primary objective for conducting EFAs is to "assess the unidimensionality of theoretical constructs; while [also] examining the relationships that exist between variables". EFAs enable the researcher to assess the factor loadings of items that have been flagged in previous analyses and also to split subscales (of a heterogenous nature) into two or more homogenous subscales.

For the purposes of this study, EFA was only performed in the cases where the CFA results indicated poor model fit (when the measurement model failed to reproduce the observed covariance matrix). On this basis, only one scale in the study reflected poor model fit – the OFER scale. Therefore, an EFA was performed on the OFER instrument so as to confirm its underlying factor structure. The EFA results for this instrument will be discussed in section 3.6.7.2.

3.5.5.5 Structural Equation Modeling (SEM)

According to Hair, Black, Babin and Anderson (2010), Structural Equation Modeling (SEM) allows for the relationships between multiple items to be analyzed in the empirical testing of theoretical models. SEM can be used for confirmatory and exploratory analyses. Therefore, it can be used to assess the measurement model, but also analyze the relationships between the constructs presented in a structural model.

There are two approaches used within SEM:

a) the covariance-based approach, and
b) the Partial Least Squares (PLS) approach (variance-based approach) (Hair et al., 2010; Haenlein & Kaplan, 2004).

According to Hair, Ringle and Starstedt (2012), these two approaches reflect different underlying philosophies and estimation ideas. Covariance-based SEM are geared towards minimizing the difference between the covariance matrix that has been implied by the model and the sample covariance model. It is a statistical approach that aims to confirm theorized relationships that have been established between respective variables (Hair et al., 2012). On the other hand, the PLS-SEM approach has a predictive objective that aims to increase the explained variance of target endogenous constructs that exist within the model (Hair et al., 2012). According to Robins (2014), in the cases where theory does not provide unlimited explanations for dependent phenomena and the primary goal of the study is prediction; the PLS approach offers noticeable advantages as a statistical analysis approach for models. A comparison between these two approaches can be found in table 3.10 which has been provided by Urbach and Ahlemann (2010). The PLS approach was used in this study given the relatively small sample size (n = 148).

Table 3.10

Comparison between PLS and CBSEM Approaches **(Urbach & Ahlemann, 2010)**

Criteria	PLS	SEM
Objective	Prediction-oriented	Parameter-oriented
Approach	Variance-based	Covariance-based
Assumption	Predictor specification (non-parametric)	Typically multivariate normal distribution and independent observation (parametric)
Parameter estimates	Consistent as indicators and sample size increase	Consistent
Latent variable scores	Explicitly estimated	Indeterminate
Epistemic relationship between and LVs and its measures	Can be modelled in either formative and reflective mode	Typically only with reflective indicators. However, the formative mode is also supported.
Implications	Optimal for prediction accuracy	Optimal for parameter accuracy
Model complexity	Large complexity	Small to moderate complexity
Sample size	Power analysis based on the portion of the model with the largest number of predictor. Minimal recommendation range from 30 - 100 cases.	Ideally based on power analysis of specific model - minimal recommendation range from 200 to 800
Type of Optimization	Locally iterative	Globally iterative
Siginificance tests	Only by means of simulations: restricted validity	Available
Availability of global Goodness of Fit (GOF)	Are currently being developed and discussed	Established GOF metric available

3.5.5.6 Partial Least Square (PLS)

According to Mohamadali (2012, p. 102) and Haenlein and Kaplan (2004), the PLS approach has the aim of maximizing "the variance of the dependent variable explained by the independent ones". Applying the PLS approach results in information on:

1. an inner model (a structural part) that shows the linkages between the proposed latent variables, and
2. an outer model (a measurement part) that shows the linkages between the latent variables and their observed variables (Henseler, Ringle, & Sinkovics, 2009).

Firstly, the outer model was assessed by analyzing the reliability and validity of the reflective constructs. The validity of the formative constructs were also analysed. Thereafter the analysis moved from the outer model (the measurement model) to the inner model (the structural model), where the variance of reflective constructs was examined; as well as their effect sizes and predictive relevance (Henseler et al., 2009).

According to Chin (1998), a Goodness-of-Fit criterion is not used to assess the overall model fit. However, evaluation takes place through a two-stage process which includes evaluating the outer model (i.e. the measurement model), and then evaluation the inner model (i.e. the structural model)

1. Evaluating the measurement model (outer model)

The measurement model's adequacy is assessed by evaluating the individual item reliability, convergent and discriminant validity (Aibinu & Al-Lawati, 2010; Urbach & Ahlemann, 2010).

Individual item reliability. In evaluating the measurement model, the first criterion that is analyzed is the internal consistency reliability. Cronbach's Alpha is the traditional criterion for assessing internal consistency and provides an estimate of reliability based on the indicator intercorrelations (Cronbach, 1951). In other words, "it measures the extent to which item responses correlate with each other" (Vaske, Beaman & Sponarski, 2015, p.166). However, reliability in PLS in not only assessed with Cronbach's Alpha, but also with a composite calculation. The composite reliability score reflects the extent to which the variance in an item is indeed attributable to the construct it intended to measure. The composite reliability criterion acknowledges that indicators have different loadings and also makes the assumption that all indicators are equivalently reliable (unlike the Cronbach Alpha criterion). According to Nunnally and Bernstein (1994), the composite reliability criterion requires a recommendable value of at least 0.70, while values below 0.60 are considered dissatisfactory.

Convergent validity. Construct validity is assessed through *Convergent validity* of the instrument. Convergent validity occurs when items of a specific construct link to other items of another construct (Urbach & Ahlemann, 2010). The PLS approach makes use of the Average Variance Extracted (AVE) in order to assess the convergent validity of constructs (Hair et al., 2010; Fornell & Larcker, 1981). AVE can be described as "the amount of variance that a latent variable component captures from its indicators relative to the amount of variance due to measurement error" (Shi, Olson and Stam, 2007, p.310). A value of 0.50 is generally required to indicate good convergent validity (Ahlemann & Urbach, 2010; Hair et al., 2010).

Discriminant validity. Construct validity is also assessed through discriminant validity. Discriminant validity is a process of determining whether the items of an instrument are distinct and thus do not indicate other variables (Straub, Boudreau & Gefen, 2004). The value of the square root of each construct's AVE should be bigger than the correlations with other constructs. Discriminant validity is also assessed through analyzing the cross-loadings of specific items. In other words, it needs to be determined that the item's loading with its specific construct should not be lower than its loading with another construct.

2. Evaluating the structural model (inner model)

Once the reliability and validity of the outer model has been assessed, the inner model is then evaluated. In order to evaluate the proposed relationships in the structural model (inner model) the coefficient of determination and path coefficients are inspected.

The *Coefficient of Determination*, also known as the R^2, determines how much variation of each endogenous variable is accounted for by the whole model. Values of 0.67 are deemed significant; while values of 0.33 and 0.19 are considered moderate and weak respectively (Chin, 1998).

The Path coefficient. The path relationships reflected in the structural model obtain estimated values. These estimated values should be assessed in terms of their sign, magnitude and significance (with significance being assessed by bootstrapping).

3.6 Measurement Instruments

The *Determinants of Psychological Detachment and Burnout Structural Model* hypothesized path specific relationships between the different latent variables. However, such relations cannot be taken as truths and must therefore be evaluated in order to test its credibility through the use of valid and reliable measuring instruments (Burger, 2011). Since constructs are deemed as "in the head" abstractions; the measuring of the influence of such constructs will require a physical tool which represents and embodies the construct in question (Theron,

2011). Behind each measurement instrument lies the logic: if X represents ξ; then Y represents η (Theron, 2011). However, in order for this to be true, and for the representative relationship of the latent variables to be credible, strong psychometric evidence of the measures must be present. Without this the logic and proof the underlying argument depicted in the structural model would become redundant (Theron, 2011). According to Diamantopoulos and Siguaw (2000), the quality of measures must be trusted. Therefore, the following section will present the psychometric properties of the various measurement instruments that were used to represent each construct/latent variable as depicted in the structural model (figure 3.1).

3.6.1 Data Capturing

The raw data was captured in an excel spread sheet which was subsequently imported into SPSS. Reversed keyed items were recoded. Missing values in the raw data set were analysed so as to determine the appropriate approach to the handling of missing data.

3.6.2 Missing Values

Since respondents either deliberately or accidentally failed to respond to all the items in the study's questionnaire, missing values were found. Data analysis could not be performed until these missing values were appropriately dealt with. Subsequently, imputation by matching was employed to address this issue.

With a sample size of 148 and the questionnaire consisting of 113 items, only 255 values were missing out of a total of 16724 possible item responses. Resultantly, the total dataset was missing 1.5% data points. Imputation by matching was thus able to be performed on the basis that the percentage of missing values was less than 30%, and that the normality assumption was rejected (normality was inspected with PRELIS). The imputation by matching procedure, performed with LISREL, was successful as no missing data points were evident after the execution of the procedure.

3.6.3 Technology

Technology and its frequent use has created a need to measure the extent to which people are influenced by various technological devices within their work and personal lives (Rosen, Whaling, Carrier, Cheever & Rokkum, 2013). The development of the Media and Technology Usage and Attitude Scale (MTUAS) has endeavoured to explore a very broad domain of technology use ranging from smartphones, emails, text messages, social media and the like (Rosen et al., 2013). The MTUAS can prove useful in gauging the extent/ frequency to which employees turn to technological devices for work-related purposes within off-job hours. The inventory consists of two subscales - the '*Usage'* and the *'Attitudes'* subscales. The former subscale is comprised of 44 items and 11 subscales (Smartphone Usage, General Social

Media Usage, Internet Searching, E-Mailing, Media Sharing, Text Messaging, Video Gaming, Online Friendships, Online Friendships, Facebook Friendships, Phone Calling and TV Viewing) which caters towards media and technology usage rates. The latter subscale consists of 16 items and four subscales (Positive Attitudes Toward Technology, Anxiety About Being Without Technology or Dependence on Technology, Negative Attitudes Toward Technology and Preference for Task Switching) that assess the respondent's attitudes towards technology (Rosen et al., 2013). However, since the study aimed to determine how the frequent use of technology influences an individuals' experienced level of psychological detachment; the *usage inventory* was deemed particularly applicable since it assesses the usage rates of a variety of technologies and technological platforms (Rosen et al., 2013). The *attitude inventory* and its subscales were less applicable in measuring the frequency of technology use. Therefore, the attitude inventory was not utilised in this study.

Given the focus of this study certain subscales within the *usage* subscale of the instrument, were deemed to be more applicable than others. For example, e-mailing is a standard technological platform that employees can easily utilise for work purposes after the completion of their core working hours. Clearly the use of video gaming and television for work purposes is not applicable to this study, although it is also measured by the scale. It was also decided that the *e-mail*, *Phone calling* and *Text messaging* subscales were most likely to be used by academic employees for work purposes. Therefore, only three (the e-mail, phone calling and text messaging) out of the 11 usage subscales were used to denotate and measure the technology usage construct. *The E-mailing* subscale asks the respondent to rate how often he/she "sends, receives and reads e-mails" (Rosen et al., 2013, p.13). The *text messaging* subscale assesses the extent to which the respondent uses their mobile phone to send texts, while the phone calling subscale assesses the extent to which the respondent listens to work related voice calls and makes work related phone calls (Rosen et al., 2013). However, some items in the subscales were adapted in order to measure the extent to which these technological platforms are being used for work purposes only. For example, the original MTUAS Mobile phone subscale item, "send and receive text messages on the phone", was adapted to "send and receive work-related text messages on a mobile phone". Moreover, given the limited number of items in the *phone calling* and *text messaging* subscales; it was decided to join the subscales into a single subscale named the *mobile phone usage* subscale. Finally, all of the abovementioned subscales made use of Likert response categories ranging from 'once a day' to 'all the time'.

In addition to including the items from the *e-mail* and *mobile phone* (a combination of the calling and text messaging subscales) usage subscales into the composite questionnaire,

another question was formulated (with a Likert response scale) to assist the researcher in gauging the frequency of technology use for work purposes after the core working hours. The question was:" Please provide an estimate of how many after-hours work you do (when not at work [i.e. non-core hours]), facilitated by any technological device'. The range of response options included: 'approximately 30 minutes per day'; 'approximately 1 hour per day'; 'approximately 1.5 hours per day'; 'approximately 2 hours per day'; 'approximately 3 to 4 hours per day' and 'more than 4 hours per day'. The final total score for technology was calculated by summing the e-mailing and mobile phone subscale scores and multiplying it with the frequency of use of these technology interfaces after core work hours.

Original Exploratory Factor Analysis for the MTUAS has showed strong psychometric properties. Through using a varimax-rotated factor analysis for the 44 items of the *usage* inventory; the current factor structure (which includes 11 factors and 44 items) was supported (Rosen et al.,2013). Furthermore, according to Rosen et al., (2013, p.8), all subscales of the MTUAS are regarded to "have excellent reliabilities". For example, the *e-mail* subscale achieved a Cronbach alpha value of 0.91; while the text messaging and phone calling subscales achieved alpha values of 0.84 and 0.71 respectively.

3.6.3.1 Descriptive Statistics and Item Analysis

Item Analysis was used to examine the psychometric properties of the constructs presented in this study. SPSS version 25.0 was used to conduct item analysis in order to determine whether the indicators of the latent variables reflect acceptable levels of reliability. Item analysis further allowed for the assessment of the homogeneity of the subscales as well as the identification of poor items. The descriptive statistics and item analysis results for the subscales of *e-mail usage*, and *mobile phone usage* are presented in tables 3.11, 3.12 and 3.13 respectively.

Table 3.11

The means, standard deviation and reliability statistics for the Technology Usage (TU) Scale

TU subscales	Number of Items	M	SD	α
E-mail usage	3	7.34	4.01	0.91
Mobile phone usage	5	6.98	5.98	0.89

As shown in table 3.12, the range of item total correlation statistics for the e-mail subscale was 0.77 - 0.85. The range of the squared multiple correlations was 0.59 – 0.73. The Cronbach

Alpha for the e-mail subscale was 0.91 (table 3.15). According to Nunnally and Bernstein (1994), the suggested critical cut-off score should be 0.70. The subscale therefore far exceeded the suggested cut-off value, demonstrating a very high internal consistency and all the items were retained in the data pool.

Table 3.12

Item statistics for e-mail usage

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 3	4.77	7.47	0.85	0.73	0.84
Item 4	4.76	7.32	0.83	0.71	0.85
Item 5	5.16	7.63	0.77	0.59	0.91

From the results presented in table 3.13, it was apparent that no item dramatically differed in terms of its item total correlation value, compared to the range of item total correlation values (from 0.71 to 0.80) obtained for all the items. The items' squared multiple correlation values also all fell within a similar range from each other, that is, from 0.56 to 0.66. Since this subscale had already obtained an exceptionally high Cronbach Alpha value of 0.89; deleting any of the mobile phone subscale items would, in fact, decrease the alpha value. Therefore, all the items were retained.

Table 3.13

Item statistics for mobile phone usage

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 6	5.41	23.71	0.73	0.58	0.87
Item 7	5.86	25.51	0.74	0.59	0.87
Item 8	5.43	21.72	0.80	0.66	0.85
Item 9	5.98	24.82	0.71	0.56	0.87
Item 10	5.24	21.74	0.74	0.58	0.87

3.6.3.2 Confirmatory Factor Analysis

The items of the MTUAS were subjected to confirmatory factor analysis (CFA) through using structural equation modelling (SEM) with LISREL 8.8 (Jöreskog & Sörbom, 2002)[5]. In fitting

[5] The CFAs for all the measurement instruments used in this study were performed using SEM with LISREL 8.8.

the measurement model for technology usage, there were 8 observed variables (X's) that were regressed onto two latent factors (ξ's) (i.e. the e-mail and mobile phone usage constructs).

Univariate and multivariate normality of the indicator variables for the MTUAS were analyzed using PRELIS[6]. The results are depicted below in table 3.14. As it can be noted, the multivariate normality assumption was rejected (skewness and kurtosis: $\chi 2 = 454.27$, $p = 0.00$). Consequently, Robust Maximum Likelihood (RML) was used to determine the model parameter estimates. RML enables an asymptotic covariance matrix to be calculated via PRELIS, which ultimately produces more appropriate fit indices in LISREL.

Table 3.14

Test of Multivariate Normality (MTUAS)

Skewness			**Kurtosis**			**Skewness & Kurtosis**	
Value	Z-score	P-value	Value	Z-score	P-value	Chi-square	P-value
27.97	18.44	0.00	10.70	10.69	0.00	454.27	0.00

The two subscales[7] of the MTUAS and their relationship to their respective indicators is represented in the measurement model. The CFA aims to determine whether these subscales have been successfully operationalised. If the measurement model succeeds in reproducing the observed covariance matrix; the operationalisation of the scales can be deemed to have been successful. If the operationalisation has indeed been successful the factor loadings should be statistically significant ($p < .05$) and sufficiently large ($\lambda > .40$), with the error variances being statistically significant and sufficiently small.

The CFA results for the measurement model of the MTUAS are presented in the table below (table 3.15). The S-B$\chi 2$ statistic is evaluated in order to determine if the MTUAS measurement model achieved exact fit. A Satorra-Bentler Scaled chi-square value of 29.21 with 19 degrees of freedom and a p-value of 0.06 ($p=0.06$) was obtained. Since the close fit null hypothesis was not rejected ($p > 0.05$); it can be concluded that the measurement model did indeed obtain exact fit. This result was not expected as it is rarely obtained.

Table 3.15 also indicates the P-value for Test of Close Fit (RMSEA < 0.05) = .32. In this regard, the close fit null hypothesis was not rejected ($p > 0.05$) indicating that the measurement model obtained close fit. Hair et al., (2006) provide suggested cut-off values of fit indices that

[6] PRELIS was used to assess the normality of all subsequent instruments used in this study.
[7] No outer loadings were calculated for the technology scale, given the way in which the total score reflecting technology usage were calculated for input in to the final model.

demonstrate Goodness-of-Fit. On the basis of these specifications, if a sample size has less than 250 observations and has less than 12 observed variables (as is the case with this instrument); the NNFI and CFI should be higher than 0.97 and the RMSEA should be less than .08. As it has been recorded is evident in table 3.15, a CFI of 0.99 and an NNFI of 0.98 was obtained, while the RMSEA value (0.06) fell below 0.08. The SRMR value (0.46) also fell well below the recommended value of 0.08.

Table 3.15
Goodness of fit statistics for the MTUAS measurement model

X2	S-Bχ2	df	S-Bχ2/ df	NNFI	CFI	RMR	SRMR	RMSEA (CI)	P(close)
49.85	29.21	19	1.54	0.98	0.99	0.09	0.05	0.06(.00; .10)	0.32

Note: *X^2 = Chi-square; S-BX^2 = Satorra-Bentler Scaled Chi-square; NNFI = non-normed fit index; CFI = comparative fit index; RMR = root mean square residuals; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation *p < .05.*

Furthermore, the CFA results revealed that the factor loadings were all statistically significant at t ≥ |1.64|. The lambda-X completely standardised solution values ranged from 0.75 (item 9=MPH) to 0.92 (item 1=EMAIL). In all, it could be concluded that the measurement model of the MTUAS achieved good model fit.

3.6.4 Work-home Segmentation Preference (WHSP)

The Segmentation Preferences and Supplies Scale by Kreiner (2006) was used to measure the work-home segmentation preferences of academics. The scale consists of two sub-dimensions: segmentation preferences and segmentation supplies. The 'Segmentation Preferences' subscale (4 items) measures the extent to which the individual prefers segmenting their work and home realms and contains a response scale ranging from "1) strongly agree to, (7) strongly disagree". A sample item is: "I don't like to think about work while I am at home*"*. The 'Segmentation Supplies' subscale refers to the values the organisation encourages in terms of segmentation strategies. This subscale consists of 4 items, with a 7-point Likert response scale ranging from "(1) strongly agree to (7) strongly disagree". A sample item is: "My workplace lets people forget about work when they are home" and "Where I work, people can mentally leave work behind when they go home" (Kreiner, 2006, p.493). It was argued that the latter subscale would be beneficial in deducing external influences on the person being able to psychologically detach after work hours; rather than merely assessing internal influences (segmentation preferences).

In a validation study of this scale by Kreiner (2006) Exploratory Factor Analysis (EFA) was performed on the items. Factor loadings above the 0.70 level were obtained for all the items. Alpha coefficients of 0.91 for the Segmentation Preferences subscale and 0.94 for the Segmentation Supplies subscale (Kreiner, 2006, p.493) were reported.

3.6.4.1 Descriptive Statistics and Item Analysis

Item Analysis was conducted on the two subscales of WHSP. That is, the Segmentation Preferences subscale (SPS) and the Segmentation Supplies subscale (SSS). The descriptive statistics and item analysis results for each subscale are presented below (tables 3.16, 3.17 and 3.18).

Table 3.16

The means, standard deviation and reliability statistics for the Work-home Segmentation Preference (WHSP) Scale

WHSP subscales	Number of Items	M	SD	α
Segmentation preferences	4	21.93	6.23	0.88
Segmentation supplies	4	10.16	21.5	0.70

As indicated in table 3.16 the Segmentation Preferences subscale obtained a high Cronbach alpha score (0.88), indicating satisfactory internal consistency. The subscale consists of four items. When analysing table 3.21, it was noted that item 4 obtained the lowest value (0.57) in the range of item total correlations (0.77 to 0.84). The item's squared multiple correlation value (0.34) was also slightly out of sync with the other items (0.67 to 0.74). Furthermore, the item statistics revealed that if item 4 were to be deleted, the Cronbach alpha value would increase slightly to 0.91. However, all four items were retained to retain the integrity of the scale since the current Cronbach value was deemed to already be more than satisfactory (0.88).

Table 3.17

Item statistics for Segmentation Preferences

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	16.83	21.02	0.77	0.68	0.84
Item 2	16.54	21.34	0.84	0.74	0.81
Item 3	16.14	22.68	0.81	0.67	0.83
Item 4	16.26	25.8	0.57	0.34	0.91

The Segmentation Supplies scale's Cronbach alpha statistic (0.70) marginally met the critical cut-off value of 0.70 (Nunnally & Bernsetein,1994). The results revealed that (table 3.17) item 6 should be flagged as a potential poor item. The item total correlation (0.07) and squared

multiple correlation (0.01) of item 6 were extremely low and clearly out of sync in comparison to the other items' values thereof. For example, the item total correlation range values for the other items were between 0.65 and 0.70; while the squared multiple correlation range was 0.54 to 0.67. Table 3.18 further indicated that the Cronbach alpha would significantly increase if item 6 were to be deleted. Based on these results, item 6 was removed from the WHSP scale item pool.

Table 3.18

Item statistics for Segmentation Supplies

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 5	7.75	11.1	0.65	0.54	0.52
Item 6	6.77	17.42	0.07	0.01	0.88
Item 7	7.76	11.89	0.70	0.67	0.49
Item 8	8.21	12.86	0.68	0.67	0.53

3.6.4.2 Confirmatory Factor Analysis

When testing for the multivariate normality assumption through using PRELIS, it was found that the Work-Home Segmentation Preferences scale failed to meet the multivariate normality assumption (skewness and kurtosis: $\chi 2 = 233.89$, $p = .00$). In other words, the null hypothesis of multivariate normality was rejected. In response to this, the RML estimation was used to determine the model parameter estimates.

Table 3.19

Test of Multivariate Normality (WHSP)

Skewness			Kurtosis			Skewness & Kurtosis	
Value	Z-score	P-value	Value	Z-score	P-value	Chi-square	P-value
17.11	13.91	0.00	81.76	6.35	0.00	233.89	0.00

The measurement model of the WHSP scale represented the relationship between its subscales (the SPS and the SSS constructs) and their respective indicator variables (with item 6 having been removed from the item pool). The CFA results are reported below in table 3.20. The S-B$\chi 2$ statistic value (16.25), along with the model's degrees of freedom (13) and p-value (0.236) were analysed in order to determine whether the model had achieved exact fit. On the basis of these values it was concluded that the null hypothesis of exact fit was not to be rejected ($p > .05$). The same can be said for the analysing of the P-value for Test of Close Fit (RMSEA < .05) = 0.55 which indicated that the close fit null hypothesis was not to be rejected ($p > .05$). The WHSP measurement model therefore achieved exact and close fit (table 3.20).

Moreover, according to Hair et al, (2006) the goodness of fit guidelines for a sample size of less than 250 observations and less than 12 observations required the NNFI and CFI values to be higher than .97; while the RMSEA and SRMR should be smaller than .08. Here, the NNFI and CFI values were above 0.97, with the RMSEA (0.04) and SRMR (0.03) values falling well below 0.08.

Table 3.20

Goodness of fit statistics for the WHSP measurement model

X2	S-Bχ2	df	S-Bχ2/ df	NNFI	CFI	RMR	SRMR	RMSEA (CI)	P(close)
14.64	16.25	13	1.25	.99	.99	.09	.03	.04(.00; .121)	0.55

Note: *X^2 = Chi-square; S-BX^2 = Satorra-Bentler Scaled Chi-square; NNFI = non-normed fit index; CFI = comparative fit index; RMR = root mean square residuals; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation *p < .05.*

Furthermore, aall the factor loadings were statistically significant at t ≥ |1.64|. The lambda-X completely standardised solution showed that the factor loadings ranged from 0.60 (item 4 = SPS) to 0.93 (item 2 = SPS). In all, and on the basis of these results, it can be concluded that the WHSP measurement model achieved very good model fit.

3.6.5 Flexible Work Arrangements

Ideally, an instrument that measures flexible work arrangements will analyse whether individual employees have flexible work arrangements on offer, and if so, whether such arrangements are actually utilised. A useful scale that was identified in operationalising the flexible work arrangement construct is that of the Work-family Culture Scale (WFC) by Thompson, Beauvais and Lyness (1999). The scale items try to gauge the culture of the organisation with regards to supporting work-family balance. Items/statements include, “In your [departmental level/unit] it is very hard to leave during the workday to take care of personal or family matters”; “In your [department level/unit], employees who participate in available work-family programs (e.g., job sharing, part-time work) are viewed as less serious about their careers than those who do not participate in the programs”, and “In your [organisation], employees who use flexitime are less likely to advance their careers than those who do not use flexitime*”* (Thompson, Beauvais & Lyness,1999, p. 400). A 7-point Likert scale was used in which respondent’s answers could range from *“strongly disagree”* (1) *to “strongly agree”* (7) (Thompson et al.,1999, p.399). According to Thompson et al., (1999, p.400), “the alpha for this scale was 0.92”.

Furthermore, this scale was deemed useful in gaining insights as to whether the use of available flexible work arrangements are encouraged and positively viewed by co-workers and

employers within academia. It was argued that this could ultimately influence the academic employee's decisions in actually using flexible work arrangements that are made available to them. However, although this scale gauges the extent to which the organisational culture supports the use of flexible work arrangements, it does not directly tap into whether the employee actually has flexible work arrangements available to them; and the actual extent/frequency to which such work arrangements are regularly used. Therefore, two additional items were developed and added to the measurement instrument in order to measure the extent of which the employee engages in flexible work arrangements. The additional items included, "Do you have flexible work arrangements available to you in your department/work unit?" and "Please indicate the frequency to which such arrangements are used on a weekly basis". The former item had a dichotomous (no=0/yes=1) response scale and represents availability (a) of flexible work arrangements. The latter scale made use of a 5-point Likert scale ranging from "*never"* to *"on an everyday basis"* for which they had to answer for each flexible work arrangement. For example, respondents had to rate the frequency of which they made use of flexitime, compressed workweeks, telecommuting, part-time work and 'other' forms of arrangements. In all, this scale, in its purest form, represents the frequency (*f*) of use of various work arrangements.

In order to comprehensively denotate and calculate the construct of Flexible Work Arrangements, it was decided that the items of the scales (the availability and frequency items) should be multiplied together and then subsequently multiplied again with the score a respondent would attain on the Work Family Culture scale. This would allow for a total flexible work arrangement score that would reflect the influence work family culture would hold over an academic employee who may have flexible work arrangements made available to them and may occasionally use them but may also be hindered or encouraged to do so by their environments. Therefore, we used the following scoring in order to comprehensively measure the construct of Flexible Work Arrangements: FWAtot= FWA(a*f)*FWAcul

3.6.5.1 Descriptive Statistics and Item Analysis

Item analysis was conducted on the Work-family Culture scale. The scale consists of three reversed-key items[8]. The descriptive statistics (table 3.21) and item analysis results (table 3.22) are discussed below.

Table 3.21

[8] No outer loadings were calculated for the flexible work arrangement scale given the way in which the total score reflecting flexible work arrangements were calculated for input in to the final model.

The means, standard deviation and reliability statistics for the Work-family Culture Scale

Work-family Culture subscale	Number of Items	M	SD	α
Work-family Culture	3	14.43	4.17	0.64

The scale achieved a Cronbach alpha score of 0.64, which was below the set cut-off value (0.70) for good internal consistency. When assessing the item statistics of the scale, it was noted from the results that the item total correlation (0.29) and squared multiple correlation (0.08) values of item 1 were considerably lower (and out of sync) with the other items' values. The item total correlation values for the other items ranged between 0.54 to 0.56; while the squared multiple correlation values ranged between 0.38 to 0.39. Further to this the results revealed that the Cronbach alpha would also increase significantly if the item were to be deleted. However, despite these results suggesting the deletion of item 1; it was decided that, with the scale holding so few items; it would be best to keep all the items. It was argued that since the flexible work arrangements final score would be calculated through the culture score being multiplied with the availability of arrangements (*a)* and the frequency of use of arrangements (*f*) total score; the slightly lower Cronbach alpha value of 0.64 would most probably have a negligible impact on a respondent's final score for this particular construct.

Table 3.22

Item statistics for the Work-family Culture scale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	9.3	10.72	0.29	0.08	0.76
Item 2	9.98	8.01	0.56	0.39	0.40
Item 3	9.59	8.53	0.54	0.38	0.42

3.6.5.2 Confirmatory Factor Analysis

Since the Work-family Culture scale holds too few items (only three); it was not possible to perform CFA analyses. Therefore, the measurement model parameter estimates for this scale were not calculated and are unable to be presented.

3.6.6 Work Pressure

Work pressure, the 'umbrella' construct for both time pressure and workload included in this study, was measured with two different instruments. The Quantitative Workload Inventory (QWI) is an instrument that endeavours to accurately capture the issue of the *amount* of work employees receive; rather than strictly focussing on the time constraints placed on the individual in which to complete their work (Spector & Jex, 1998). In other words, the instrument measures workload in a way which is compatible with Sonnentag and Bayer's (2005)

understanding of the term 'Quantitative Workload'. The QWI defines the construct of 'quantitative workload' in terms of "the sheer volume of work required of the employee" (Spector & Jex, 1998, p.358). The QWI is made up of five items, each of which cater to this definition. Examples of the items are: "How often does your job require you to work very fast?"; "How often is there a great deal to be done?" and "How often do you have to do more work than you can do well?" (Spector & Jex, 1998; Kim, Shin & Umbreit, 2007). Response categories on the 5-point Likert scale include "Less than once per month*", "*Once or twice per month*", "*Once or twice per week", "Once or twice per day" and "Several times per day" (Spector & Jex,1988, p.360). The higher the respondent scores; the higher the level of workload that is being experienced by the individual (Spector & Jex, 1988). The Cronbach alpha coefficient for this scale has been reported to be particularly high (.82) (Spector & Jex, 1988).

In addition, the Developmental Inventory of Sources of Stress (DISS) by Higbee and Dwinell (1992) was used to assess the construct of 'time pressure'. The scale was developed to cater to employee's complaints of there being too many deadlines with not enough time to complete them. Therefore, time was placing limits on their ability to actually meet work demands; hence 'time pressure' (Higbee & Dwinell, 1992). Despite this inventory directly measuring the work pressure dimension of time pressure; the original instrument catered towards the assessment of stress for students, with the aim of assisting such individuals to eliminate and/ minimise various sources of stress. Therefore, for the purpose of this study the items of the 'time management' subscale were adapted to measure time pressure, as experienced by the academic employee. Items in this 5-point, Likert subscale include, *"*I do not have enough time to do everything that needs to be done", "I do not have time to get the rest I need", "I get anxious when I realize I do not have the time to get my work done", "I feel like I am hurrying all the time", "I have too much work to take home and complete after my core working hours", and "I need more time to think*"* (Higbee and Dwinell,1992, p.28). Response categories ranged from, 'every day/almost every day' to 'never or almost never[9]' (Higbee & Dwinell, 1992). According to Higbee and Dwinnel (1992) the alpha coefficient for the *time management* subscale (0.75) indicate good internal consistency. Both the time pressure and workload subscales were combined to form a total score representing the construct of *workload pressure*[10] for the academic employee.

[9] Responses were reversed scored to reflect that higher scores on time pressure indicated more time pressure.
[10] A correlation of 0.74 between these two subscales were obtained for these results.

3.6.6.1 Descriptive Statistics and Item Analysis

For the purposes of this study, the construct of work pressure comprised of two sub-dimensions. That is, workload and time pressure. The QWI was used to assess the level of workload that was being experienced by the respondent at that point in time; while the 'Time Management' subscale of the DISS was used to assess the level of time pressure experienced by the respondent. The descriptive statistics and item analysis results of both subscales are presented below in tables 3.23, 3.24 and 3.25 respectively.

Table 3.23

The means, standard deviation and reliability statistics for the Quantitative Workload Inventory

QWI subscales	Number of Items	M	SD	α
Workload	5	19.28	5.03	0.89
Time Pressure	6	22.37	6.76	0.93

As indicated in table 3.23, the Workload subscale obtained a very good Cronbach alpha value (0.89). Inspection of the item statistics (table 3,24) revealed that item 1 had obtained the lowest item total correlation (0.62); while the other items of the workload subscale obtained item total correlation values ranging between 0.76 and 0.83. Item 1 also obtained the lowest squared multiple correlation value (0.44) in comparison to the subscale's other items that ranged between 0.86 and 0.90. However, if item 1 were to be removed from the subscale, the alpha value would not dramatically increase. Given the already good internal consistency, item 1 was not removed from the data pool.

Table 3.24

Item statistics for Workload subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	15.57	17.87	0.62	0.44	0.90
Item 2	15.11	17.63	0.80	0.68	0.87
Item 3	15.56	16.09	0.76	0.61	0.87
Item 4	15.14	16.45	0.83	0.73	0.86
Item 5	15.76	14.99	0.78	0.65	0.87

The Time Pressure subscale obtained a very high alpha value (0.93) signalling very high internal consistency for this scale. The item total correlation values for all the items ranged from 0.73 to 0.85. The squared multiple correlations for all items ranged from 0.65 to 0.74. All item values were in sync and no irregular patterns emerged when analysing both the item total correlations and the squared multiple correlations. All items were thus retained.

Table 3.25

Item statistics for Time Pressure subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 6	18.60	33.15	0.80	0.66	0.92
Item 7	18.89	30.98	0.84	0.71	0.92
Item 8	18.79	32.00	0.79	0.65	0.92
Item 9	18.49	31.21	0.85	0.74	0.91
Item 10	18.78	31.88	0.81	0.67	0.92
Item 11	18.31	33.98	0.73	0.54	0.93

3.6.6.2 Confirmatory Factor Analysis

When testing for the multivariate normality assumption with PRELIS, it was found that the Work Pressure scale failed to obtain multivariate normality (as noted in table 3.26). Therefore, we had to reject the null-hypothesis of multivariate normality (skewness and kurtosis: $\chi 2=210.99$, p=.00). Subsequently, the RML technique was utilised in order to derive the model's parameter estimates.

Table 3.26

Test of Multivariate Normality (Work Pressure)

Skewness			Kurtosis			Skewness & Kurtosis	
Value	Z-score	P-value	Value	Z-score	P-value	Chi-square	P-value
27.89	12.22	0.00	178.91	7.85	0.00	210.99	0.00

The measurement model of the Work Pressure construct intended to depict the relationship between the two subscales and its respective indicator variables. As presented in table 3.27; it can be noted that, by analysing the S-B$\chi 2$ statistic (67.75), the degrees of freedom (43) and the p-value (0.00); the Work Pressure measurement model failed to achieve exact fit. Therefore, the null hypothesis of exact fit was subsequently rejected ($p < .05$).

However, table 3.27 indicates that the measurement model achieved close fit. Since the p-value obtained a value of (0.22), the null hypothesis of close fit was not rejected ($p > .05$). Furthermore, the recommended goodness-of-fit guidelines provided by Hair et al., (2006) were also all met. The NNFI (0.98) and CFI (0.99) values were above the 0.97 benchmark and the SRMR (0.05) AND RMSEA (0.06) values fell below the maximum cut-off point of 0.08. It was, therefore, concluded that the Work Pressure measurement model achieved good model fit.

Table 3.27

Goodness of fit statistics for the Work Pressure measurement model

X2	S-Bχ2	df	S-Bχ2/ df	NNFI	CFI	RMR	SRMR	RMSEA (CI)	P(close)
94.19	67.75	43	1.58	.98	.99	.07	.05	.06(.043; .35)	0.22

Note: *X^2 = Chi-square; S-BX^2 = Satorra-Bentler Scaled Chi-square; NNFI = non-normed fit index; CFI = comparative fit index; RMR = root mean square residuals; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation *p < .05.*

3.6.7 Exhaustion/Acute Fatigue

Exhaustion/acute fatigue can be considered an antecedent to psychological detachment, but it is also more formally understood as a dimension of the burnout construct. Owing to the fact that the latter viewpoint is so widely shared in the research domain there are few existing measures that cater to work-related fatigue; other than that of the burnout construct. However, the Occupational Fatigue Exhaustion/Recovery Scale (OFER) was identified to be of some use in this regard for the purposes of this study. The measure intends to gain insight into the distinguishing of acute and chronic fatigue varieties; as well as to measure the recovery of employees in terms of work-related fatigue (Winwood et al., 2006). It is the *"*relative '[immobility]/ incapacitation' after work activity*"* that has been used as a 'philosophical base' in which to derive items for this particular inventory (Bartley, 1957, p.302; Winwood et al., 2006). The inventory bases items on the notion that it is the lack of engagement in non-essential; pleasurable activities in off-job hours, whatever they may be, that is related to acute fatigue (Winwood et al., 2006). It was argued in this study that in alignment to the Conservation of Resources theory (Hobfoll, 1989); the *daily* experience of incapacitation/daily experience of tiredness after the core work hours; with no periods of recovery in a given work day; will accumulate into Acute Fatigue. Acute Fatigue that is persistently experienced over time will contribute to the experience of *Chronic Fatigue* and *Burnout*. Some of the items in the Occupational Fatigue Exhaustion/Recovery Scale (OFER) scale cater towards chronic fatigue, a construct that was not deemed relevant to this study. These items were removed from the measurement scale. Overall, there are a variety of OFER subscales that cater towards fatigue and strain (OFER 15); chronic fatigue (OFER Chronic Fatigue State Scale); acute fatigue (OFER Acute Fatigue State Scale); and finally, the exhaustion recovery (OFER Recovery State Scale).

However, the subscales that were of relevance to this study included the Acute Fatigue State Scale and the Recovery State Scale which both comprised of 5 items each. The statements for both subscales were rated according to a 7-point Likert response scale; with answers ranging from strongly disagree (1) to strongly agree (7). The subscale measuring the level of acute fatigue experienced by the individual (*The OFER Acute Fatigue State Subscale)* uses items/statements such as, *"*After work I had little energy left today*";* and *"*My work drained my energy completely today*"* (Winwood, Winefield, Dawson & Lushington, 2005, p.2). According

to Winwood et al. (2006), the Acute Fatigue State scale has a Cronbach's alpha value of .82. The subscale measuring the level of intershift recovery between work and home hours (The OFER Recovery State Scale*)* includes items such as, "I didn't have enough time to recover my energy completely after work yesterday*"* and "If I was tired from work yesterday, I was fully refreshed by the start of work today*" (*Winwood et al., 2005, p.2*).* Furthermore, according to Winwood et al., (2005), the Recovery State Scale has obtained a Cronbach's alpha of 0.75.

3.6.7.1 Descriptive Statistics and Item Analysis

The two OFER subscales [Acute Fatigue State Scale (AFS) and Recovery State Scale (RSS)] descriptive statistics and item analysis results are presented below in tables 3.28, 3.29 and 3.30 respectively. There are reversed key items in this instrument, which are indicated in the item statistics tables.

Table 3.28

The means, standard deviation and reliability statistics for the Occupational Fatigue Exhaustion/Recovery Scale (OFER)

OFER subscales	Number of Items	M	SD	α
AFS	5	27.57	6.81	0.93
RSS	5	24.11	6.40	0.85

The AFS subscale obtained a very good Cronbach alpha score of 0.93. The high alpha was corroborated by the item statistics (table 3.29) that reflected corrected item total correlation values in sync, and within range of each other. The corrected item total correlation values ranged from 0.69 to 0.90. However, the squared multiple correlation value for item 4 (0.54) could be interpreted as falling somewhat out of the general range of the other items' values that ranged from 0.65 and 0.92. Despite this, the scale alpha value would only slightly improve (0.94) if item 4 were to be removed from the subscale. In order to retain the integrity of the subscale item 4 was retained in the item pool.

Table 3.29

Item statistics for the AFS subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	21.89	29.52	0.90	0.91	0.90
Item 2	21.89	29.02	0.90	0.92	0.90
Item 3	22.28	28.49	0.86	0.80	0.91
Item 4 R	22.39	32	0.69	0.54	0.94
Item 5 R	21.85	31.98	0.77	0.65	0.93

The RSS subscale also achieved a very good Cronbach alpha value of 0.85 (table 3.28) commenting favourably on the internal consistency of this scale. The item statistics for this subscale revealed that the item total correlation values were all in a reasonable range of each other, with item 6 holding the lowest item total correlation value of 0.56 and item 9 holding the highest total correlation value of 0.76. The same can be said for the items' squared multiple correlation values where the values ranged from 0.41 (item 6) to 0.65 (item 9). Moreover, the item statistics revealed that no removal of any of these items would increase the alpha value of 0.85. Therefore, all items were retained for further analysis.

Table 3.30

Item statistics for the RSS subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 6	19.25	28.12	0.56	0.41	0.85
Item 7 R	19.33	27.69	0.60	0.56	0.84
Item 8	19.35	26.39	0.72	0.58	0.80
Item 9 R	19.38	26.17	0.76	0.65	0.79
Item 10	19.12	27.77	0.68	0.50	0.82

3.6.7.2 Confirmatory Factor Analysis

Below, table 3.31 indicates that the Acute Fatigue/Exhaustion measurement model has failed to meet the multivariate normality assumption. In other words, the null hypothesis of multivariate normality was rejected (skewness and kurtosis: $\chi 2=400.18$, p=.00). Resultantly, the RML estimation was employed.

Table 3.31

Test of Multivariate Normality (Acute Fatigue/Exhaustion)

Skewness			Kurtosis			Skewness & Kurtosis	
Value	Z-score	P-value	Value	Z-score	P-value	Chi-square	P-value
33.93	17.69	0.00	167.06	9.35	0.00	400.18	0.00

The CFA results for the Acute Fatigue/Exhaustion (AF/E) measurement model are presented in table 3.31. On the basis of the S-B$\chi 2$ value of 106.40, the degrees of freedom value (34) and a p-value of 0.00; the exact fit null hypothesis was rejected ($p < .05$).

As indicated by the P-Value for Test of Close Fit (RMSEA < .05) = .00 (table 3.32), the close fit null hypothesis was also rejected ($p < .05$). Therefore, the measurement model failed to attain both exact and close fit. The goodness-of-fit statistics support such conclusions since

the NNFI value fell just below the recommendable benchmark of 0.97; while the CFI just met the benchmark (0.97). Moreover, the SRMR fell just below the maximum cut-off point of 0.08; while the RMSEA value of 0.12 far exceeded the cut-off value for good fit (0.08). On the basis of attaining the aforementioned results that indicate poor model fit, it was decided to perform EFA to gain greater insight as to why this particular measurement model failed to achieve good fit. The EFA results are discussed below.

Table 3.32

Goodness of fit statistics for the Occupational Fatigue Exhaustion/Recovery (OFER) measurement model

X2	S-Bχ2	df	S-Bχ2/ df	NNFI	CFI	RMR	SRMR	RMSEA (CI)	P(close)
166.53*	106.40*	34	3.13	.96	.97	.17	.07	.12(.31; .73)	0.00

Note: *X^2 = Chi-square; S-BX^2 = Satorra-Bentler Scaled Chi-square; NNFI = non-normed fit index; CFI = comparative fit index; RMR = root mean square residuals; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation *p < .05.*

The CFA results for the AF/E measurement model proved disappointing. On this basis, it was decided to analyse the factor structure of the instrument so as to gain greater insight into how the model fit could be improved and identified in a subsequent CFA. The EFA was performed on the Acute Fatigue subscale (5 items) and the Recover State subscale (5 items) of the OFER scale. Principal axis factoring with direct oblimin rotation was used to conduct the EFA. The factor analysability of the scale was made clear since the KMO-value was 0.866.

When analysing the Scree Plot and the Eigenvalue-greater-than-one rule it became apparent to note that the analyses was immediately indicating the extraction of two factors. The two-factor solution accounted for 60.07% of the total variance; while the non-redundant residuals with absolute values greater than 0.5 revealed a value of 48% for the solution. However, when forcing a one factor solution; the non-redundant residuals with absolute values greater than 0.5 revealed a value of 71%. Therefore, is was concluded that the two-factor solution could ultimately be considered an acceptable interpretation of the factor structure of the AF/E measure within the current sample. Below, the two-factor structure matrix is presented in table 3.33. Despite the poor CFA model fit, the EFA provided sufficient evidence of a two-factor solution being appropriate. No further analyses were therefore performed.

Table 3.33

AF/E structure matrix

Item	Factor 1	Factor 2
AF1	**.954**	.587
AF2	**.954**	.619
AF3	**.906**	.643
AF4	**.684**	.522

AF5	**.773**	.589
RS1	.549	**.575**
RS2	.446	**.716**
RS3	.610	**.755**
RS4	.560	**.877**
RS5	.625	**.717**

3.6.8 Intrinsic Motivation

The Intrinsic Motivation Inventory (IMI) has proved useful in a number of past studies focussing on intrinsic motivation and self-regulation (Monteiro, Mata & Peixoto, 2015). Created by Ryan and Deci, the IMI is a multidimensional instrument that uses the Self-determination Theory as the background to, and context of the items, that have been developed within the scale (Monteiro et al., 2015). The scale has been developed through understanding intrinsic motivation in terms of partaking in an *"*activity for its inherent satisfactions rather than for some separable consequence*"* (Ryan & Deci, 2000, p.56). Despite the instrument's name (IMI) only one subscale directly refers to and measures intrinsic motivation. It is the interest/enjoyment self-report subscale which truly captures the latent variable of intrinsic motivation (Intrinsic Motivation Inventory, 2000). Examples of the items for this particular subscale include, "I enjoyed doing this activity very much", and "While I was doing this activity; I was thinking about how much I enjoyed doing it". The response categories range from 'not all true' to 'very true'. All items of the sub-scale hold factor loadings that are, at the least, above 0.6 (Monteiro et al., 2015). According to Monteiro et al., (2015), the use of the IMI interest-enjoyment subscale for their study proved to reflect high reliability scores, with a Cronbach alpha value of 0.90.

3.6.8.1 Descriptive Statistics and Item Analysis

The construct of intrinsic motivation was measured using the IMI (Ryan & Deci, 2000). In totality, the IMI has 7 subscales. However, for the purposes of this study only 1 of the subscales were used - the Interest/Enjoyment subscale. The other 6 subscales that were not utilised include the Perceived Competence; Effort/Importance; Pressure/tension; Perceived Choice; Value/Usefulness and Relatedness subscales. The descriptive statistics and item analysis results for the Interest/Enjoyment subscale are contained in the respective tables below (tables 3.34, 3.35 and 3.36). The reversed key items are indicated in the item statistics tables.

Table 3.34

The means, standard deviation and reliability statistics for the Interest/Enjoyment Subscale

IMI subscales	Number of Items	M	SD	α
Interest/Enjoyment	7	24.84	4.96	0.79

As it is indicated in table 3.34, the Interest/Enjoyment subscale attained a satisfactory Cronbach alpha value of 0.79. However, the item statistics (table 3.35) revealed a slight concern when inspecting the item total correlation values of the items. The item total correlation value for item 4 (0.26) could be considered to be out of range of the other items' item total correlation values (0.44 to 0.72). The squared multiple correlation value of item 4 (0.71), was however, less of out sync with the range of multiple correlation values of the other items (0.50 to 0.72). Despite these contradictory patterns in data, it was also noted that the alpha value of the subscale would dramatically rise if item 4 were to be removed (0.86). On this basis, it was decided to remove item 4 from the interest/enjoyment subscale.

Table 3.35

Item statistics for the Interest/Enjoyment subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	20.59	17.73	0.72	0.68	0.72
Item 2	21.05	17.86	0.67	0.63	0.73
Item 3 R	22.42	18.37	0.44	0.72	0.78
Item 4 R	22.25	20.05	0.26	0.71	0.86
Item 5	20.53	19.88	0.52	0.50	0.87
Item 6	20.88	18.37	0.68	0.66	0.73
Item 7	21.24	18.73	0.46	0.47	0.77

Item analysis was rerun so as to exclude item 4 from the subscale's item pool. The new descriptive statistics for the Interest/Enjoyment subscale are presented below in table 3.46. The results revealed that the scale internal consistency increased with the deletion of item 4 from 0.79 to 0.86.

Table 3.36

The means, standard deviation and reliability statistics for the Interest/Enjoyment subscale

IMI subscales	Number of Items	M	SD	α
Interest/Enjoyment	6	23.33	3.97	0.86

3.6.8.3 Confirmatory Factor Analysis

According to table 3.37, the multivariate normality assumption was not met for the *Interest/Enjoyment subscale* measurement model. Therefore, the null hypothesis of multivariate normality assumption was rejected (skewness and kurtosis: $\chi 2=102.46$; $p=.00$). It necessitated the use of the RML estimation technique.

Table 3.37

Test of Multivariate Normality (Intrinsic Motivation Inventory)

Skewness			**Kurtosis**			**Skewness & Kurtosis**	
Value	Z-score	P-value	Value	Z-score	P-value	Chi-square	P-value
8.69	9.02	0.00	58.03	4.60	0.00	102.46	0.00

The measurement model of the Interest/Enjoyment subscale was analysed in order to determine the relationship between the subscale and its numerous indicator variables. When analysing table 3.38, it becomes apparent to note that the null hypothesis of exact fit would have to be rejected ($p < .05$) on the basis of attaining the following values: the S-Bχ2 statistic (18.47), the degrees of freedom (9) and the p-value (0.03). Therefore, the IMI measurement model failed to achieve exact fit.

Despite this, the results (table 3.38) indicated that the Interest/Enjoyment subscale measurement model achieved close fit on the basis of the p-value for close fit (0.14). Therefore, the null hypothesis of close fit was subsequently not rejected ($p > .05$). Furthermore, the other GOF results (Hair et al., 2006) corroborated the empirical argument for close fit. This is because the NNFI (0.97) and CFI (0.98) values fell on and above the 0.97 benchmark, while the SRMR (0.04) and RMR (0.05) fell below 0.08, and the RMSEA obtained a value of 0.08. Overall it was concluded that the Interest/Enjoyment subscale measurement model achieved good model fit.

Table 3.38

Goodness of fit statistics for the Intrinsic Motivation Inventory measurement model

X2	S-Bχ2	Df	S-Bχ2/ df	NNFI	CFI	RMR	SRMR	RMSEA (CI)	P(close)
30.24*	18.47*	9	2.05	.97	.98	.05	.04	.08(.03; .14)	0.14

Note: *X^2 = Chi-square; S-BX^2 = Satorra-Bentler Scaled Chi-square; NNFI = non-normed fit index; CFI = comparative fit index; RMR = root mean square residuals; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation *p < .05.*

3.6.9 Psychological Detachment

Sonnentag and Fritz (2007) developed the Recovery Experience Questionnaire for research involving the interrelationships between psychological detachment, relaxation, control, mastery, and recovery experiences. The authors of this instrument interpret Meijman and Mulder's (1998, p.205) description of the term 'recovery' as a *"*process during which individual functional systems that have been called upon during a stressful experience return to their pre-stressor levels*"*. Furthermore, the Conservation of Resources theory (COR) would

recognise a need for such recovery from work (Sonnentag & Fritz, 2007). A typical recovery experience would comprise of mentally switching off from work-related stressors, or what is otherwise known as *Psychological Detachment*. In other words, the instrument defines psychological detachment as being part of the recovery process in terms of it being "an individual's sense of being away from the work situation" (Sonnentag & Fritz, 2007, p.205). This corresponds to the understanding that psychological detachment is useful in avoiding stressful situations and in which allows for the restoration of depleted resources (Bakker, Sanz-Vergel, Rodriguez-Munoz & Oerlemans, 2014). Overall, the instrument assesses different strategies that can be taken to recover. These include 'psychological detachment', 'relaxation', 'mastery' and 'control'. However, this study specifically focussed on the psychological detachment subscale which consists of 4 items. Items/statements of the subscale include, 'I forget about work', 'I don't think about work at all', 'I distance myself from work', *and* 'I get a break from the demands of work'. The subscales has shown strong factor loadings; with Cronbach alpha scores that range from .69 to .96 (Sonnentag & Fritz, 2007). The subscales were also found to represent separate constructs with a high level of reliability (Sonnentag & Fritz, 2007).

3.6.9.1 Descriptive Statistics and Item Analysis

The Psychological Detachment subscale of the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007) was used to assess the construct of psychological detachment. The psychological detachment subscale consists of 4 items. The descriptive statistics (table 3.39) and item analyses results (table 3.40) of the subscale and its various items are presented and discussed below.

Table 3.39

***The means, standard deviation and reliability statistics for the* Psychological Detachment subscale**

REQ subscales	Number of Items	M	SD	α
Psychological Detachment	4	7	3.46	0.86

Table 3.39 indicates that the Psychological Detachment subscale achieved a Cronbach alpha score of 0.86. This reflects that the subscale holds a more than acceptable level of internal consistency. The item statistics depicted in table 3.40 supported this finding since the item total correlation values were in reasonable range of each other (0.62 to 0.81). The same can be said for the items' values for the squared multiple correlation range (0.46 to 0.70). Furthermore, the removal of any one of the items would only slightly increase the alpha value

from its current standing (0.86). On this basis, all the items of the Psychological Detachment subscale were retained.

Table 3.40

Item statistics for the Psychological Detachment subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	5.32	7.02	0.76	0.64	0.80
Item 2	5.52	7.69	0.66	0.46	0.84
Item 3	5.32	6.71	0.81	0.70	0.78
Item 4	4.85	6.82	0.62	0.40	0.87

3.6.9.2 Confirmatory Factor Analysis

Since the Psychological Detachment subscale only consists of 4 items it was not possible to conduct a CFA.

3.6.10 Recovery

The link between recovery and burnout has been well documented (Binnewies, Sonnentag & Mojza, 2009; Fritz & Sonnentag, 2006; Geurts & Sonnentag, 2006). Sonnentag and Kruel (2006) have operationalised the recovery construct with The State of being Recovered scale, which consists of four items. These items aim to uncover a person's level of recovery in the morning before the individual goes to work. Therefore, the scale refers to the extent to which the person feels recovered in the morning, rather than after work in the evening. The items of the scale include: "This morning I feel well rested"; "This morning I am filled with new energy"; "This morning I feel mentally refreshed" and "This morning I am filled with new energy". The response categories are composed of a five-point Likert scale ranging from *I do not agree at all* (1) to *I fully agree* (5). Furthermore, the scale has achieved a high level of internal consistency with a reported Cronbach alpha value of 0.88 to 0.93 over the four days in which it was utilised in the study (Binnewies, Sonnentag & Mojza, 2009).

3.6.10.1 Descriptive Statistics and Item Analysis

The State of being Recovered scale, developed by Sonnentag and Kruel (2006), is the instrument that was used to measure the construct of Recovery. It consists of two subscales. These include the Physical subscale and Psychological subscale. Each subscale has two items. The descriptive statistics and the item analysis results are discussed and depicted in the tables below for the full scale (i.e. all four items, as item analysis cannot be conducted on two items only) (tables 3.41 and 3.42 respectively).

Table 3.41

The means, standard deviation and reliability statistics for the State of being Recovered Scale

State of being Recovered Scale	Number of Items	M	SD	α
The State of being Recovered Scale	4	8.93	4.44	0.96

Table 3.41 indicates that the scale obtained an extremely high Cronbach alpha score of 0.96. This reflects an extremely high level of internal consistency. The item statistics in table 3.42 supports this finding on the basis that the item total correlation values were in close range of each other (0.87 - 0.92). The same can also be said for the range found for the squared multiple correlation values (0.78 – 0.86). Since the scale achieved an extremely high Cronbach alpha value of 0.96; the removal of any of the items from the item pool would only stand to decrease the alpha value. Therefore, all of the items of the State of being Recovered Scale were retained.

Table 3.42

Item statistics for the State of being Recovered Scale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	6.69	11.34	0.89	0.83	0.95
Item 2	6.63	11.21	0.92	0.85	0.94
Item 3	6.74	11.12	0.91	0.86	0.94
Item 4	6.73	11.32	0.87	0.78	0.95

3.6.10.2 Confirmatory Factor Analysis

Confirmatory Factor Analysis was unable to be performed for the State of being Recovered Scale on the basis that it only contains 4 items.

3.6.11 Burnout

The ‘burnout’ construct has been well operationalised in the burnout literature. The two predominant scales that have accrued much attention include the Maslach Burnout Inventory (MBI) and the Copenhagen Burnout Inventory. However, the MBI is especially useful in assessing the burnout dimensions found amongst human-service workers (Winwood et al., 2006). Since it can be argued that the academic employee falls into this category (Coaldrake & Stedman, 1999); it was argued that the MBI would prove useful for this study. The MBI is also the most widely used instrument in terms of assessing for the phenomenon of burnout (Aguayo, Pecino, de la Fuente Solana & Fernandez, 2011). The original MBI version of 1988

is a 22-item scale that assesses all the dimensions of burnout, namely that of emotional exhaustion [(EE), 9 items], depersonalisation [(DP), 5 items] and lack of personal accomplishments [(PA), 8 items]. Items/statements catering to the EE dimension include, "I feel emotionally drained from work" and "I feel used up at the end of the day". In assessing DP, items include, "I feel I treat some students as if they were impersonal objects" and "I have become more callous towards people since I took this job". The factor of lack of PA is assessed through items that include, "I deal very effectively with the problems of my students" and "I feel very energetic". The response categories try to gauge the frequency of which respondents experience such feelings on a 7-point anchored Likert scale (Maslach, Jackson & Leiter, 1997). The answers range from, "never" (0) to "every day" (6). The psychometric properties of the instrument have been well established through research. For example, Maslach et al., (1997) reported a Cronbach's alpha for each respective factor of 0.90, 0.79 and 0.71 (Maslach et al., 1997).

3.6.11.1 Descriptive Statistics and Item Analysis

The MBI was used to measure the construct of Burnout in this study. The well-known and used instrument has three subscales: the Emotional Exhaustion subscale; the Lack of Personal Accomplishment Subscale and the Depersonalisation subscale. Item analysis was performed on all three subscales. The descriptive statistics and item analysis results are discussed and depicted below in tables 3.43 to 3.46.

Table 3.43

The means, standard deviation and reliability statistics for Maslach Burnout Inventory (MBI)

MBI subscales	Number of Items	M	SD	α
Emotional Exhaustion	9	35.65	9.84	0.90
Lack of Personal Accomplishment	8	24.41	6.55	0.83
Depersonalisation	5	10.55	4.18	0.69

The Emotional Exhaustion subscale obtained a very high Cronbach alpha score of 0.90 (table 3.43). The item analysis results (table 3.44) revealed that the item total correlation values were all within acceptable range of each other (0.64 to 0.82), excluding items 8(0.43) and 9 (0.38). There appeared to be a similar irregularity with item 8 (0.42) and 9 (0.38) in the squared multiple correlation values. Both items' values were, yet again, the lowest in the range (0.38 to 0.82). However, only a very marginal increase in the alpha would be attained by deleting

either of these two items (Δ = 0.01) and therefore items 8 and 9 were retained in the item pool for this subscale.

Table 3.44

Item statistics for the Emotional Exhaustion subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	31.28	78.39	0.77	0.79	0.88
Item 2	31.09	76.07	0.78	0.81	0.88
Item 3	31.24	78.37	0.72	0.60	0.89
Item 4	31.95	72.58	0.81	0.78	0.88
Item 5	31.70	72.04	0.82	0.80	0.88
Item 6	31.98	78.45	0.64	0.45	0.89
Item 7	31.21	74.37	0.71	0.55	0.88
Item 8	32.33	82.62	0.43	0.42	0.91
Item 9	32.42	84.93	0.34	0.38	0.91

The Lack of Personal Accomplishment subscale achieved a Cronbach alpha score of 0.83. According to table 3.45 the item total correlation values ranged between 0.42 to 0.64. All the values were in reasonable range of each other. The squared multiple correlation values ranged from 0.32 to 0.66. From the results it was clear that there was no item that can be flagged as being totally out of sync with the other values. Moreover, deleting any one item in this subscale would not increase the current alpha value of 0.83. Therefore, all the items of the subscale were retained for further analyses.

Table 3.45

Item statistics for the Lack of Personal Accomplishment subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	21.59	34.37	0.60	0.64	0.81
Item 2	21.64	33.88	0.64	0.66	0.80
Item 3	21.81	33.38	0.63	0.53	0.80
Item 4	20.54	34.97	0.42	0.32	0.83
Item 5	21.04	32.37	0.61	0.47	0.80
Item 6	20.99	32.99	0.53	0.37	0.81
Item 7	21.68	33.76	0.55	0.42	0.81
Item 8	21.59	33.71	0.50	0.39	0.82

As indicated in table 3.46, the Depersonalisation subscale achieved the lowest Cronbach alpha value in comparison to the other subscales (0.69). It also fell just below the critical cut-off score of 0.70 for internal consistency (Nunnally & Bernstein, 1994). The results revealed (table 3.50), that the item statistics for item 4 (i.e. item total correlation: 0.21, squared multiple correlation: 0.14) appeared to be out of sync with both the item total correlation (0.40 to 0.68) and squared multiple correlation (0.19 to 0.58) ranges. It can also be noted that if item 4 were to be deleted, the alpha value would rise from 0.69 to 0.73. The item was flagged as a potentially poor item, and the results of this item loading in the Confirmatory Factor Analysis was used to establish additional evidence to determine whether the item should be removed from the item pool or not.

Table 3.46

Item statistics for the Depersonalisation subscale

Variable	Mean if deleted	Var. if deleted	Item Total correlation	Squared Multiple R	Alpha if deleted
Item 1	9.05	13.34	0.50	0.34	0.63
Item 2	8.49	11.31	0.68	0.58	0.55
Item 3	7.91	10.17	0.55	0.52	0.59
Item 4	8.92	14.33	0.21	0.14	0.73
Item 5	7.86	10.99	0.40	0.19	0.67

3.6.11.2 Confirmatory Factor Analysis

As noted in table 3.51, the MBI failed to meet the multivariate normality assumption. In other words, the null hypothesis of multivariate normality assumption was rejected (skewness and kurtosis: $\chi 2=196.10$; p=.00). On the basis of these results, the RML estimation technique was utilised.

Table 3.47

Test of Multivariate Normality (Maslach Burnout Inventory)

Skewness			Kurtosis			Skewness & Kurtosis	
Value	Z-score	P-value	Value	Z-score	P-value	Chi-square	P-value
116.53	11.85	0.00	581.31	7.47	0.00	196.10	0.00

A measurement model with three latent traits (EE, PA and DP), and the respective items loadings on these traits, were fitted. As indicated below in table 3.52, the MBI measurement model attained the following values: the S-B$\chi 2$ statistic (611.88), the degrees of freedom (206) and the p value (0.00). On the basis of these values, the null hypothesis of exact fit were

rejected ($p < .05$). Therefore, as it was to be expected, the MBI did not achieve exact measurement model fit.

Moreover, with respect to determining whether the MBI measurement model attained close fit, table 3.52 was further analysed. Unfortunately, the MBI measurement model did not achieve close fit on the basis of the p-value for close fit, obtaining a value of 0.00. Therefore, the null hypothesis of close fit was subsequently rejected ($p < .05$). The goodness-of-fit parameters (Hair et al., 2006) also supported the notion that close fit was not obtained. This is because the NNFI (0.86) and CFI (0.88) values fell below the 0.97 benchmark while the SRMR (0.13) and RMSEA values were above the critical 0.08 value for good model fit.

Table 3.48

Goodness of fit statistics for the Maslach Burnout Inventory measurement model

X2	S-Bχ2	df	S-Bχ2/ df	NNFI	CFI	RMR	SRMR	RMSEA (CI)	P(close)
691.21*	611.88*	206	2.97	.86	.88	.23	.13	.12(2.28; 3.29)	0.00

Note: *X^2 = Chi-square; S-BX^2 = Satorra-Bentler Scaled Chi-square; NNFI = non-normed fit index; CFI = comparative fit index; RMR = root mean square residuals; SRMR = standardised root mean residual; RMSEA = root mean square error of approximation *p < .05.*

Given this poor measurement model fit results for the well-known and popular MBI, the literature was inspected to investigate the comparability of these results to other studies of this nature. According to Byrne (2010), a previous study that utilised the MBI for educators at the intermediate, secondary and tertiary level assessed the factorial validity of the instrument, as well as the equivalence of structure and factorial measurements across the groups. This study also attained a malfitting model for the MBI's three-factor structure. Another study conducted by Rahman, Sulaiman, Nasir and Omar (2015) also led to the conclusion that the measurement model of the MBI did not reflect acceptable goodness-of-fit statistics ($\chi 2$ = 656.986, CFI = 0.843, GFI = 0.828, TLI = 0.823, RMSEA = 0.080) resulting in the need for the model to be revised. These findings corroborated a study by Beckstead (2002), where it was concluded that, in order to fit the data in their study, the MBIs three-factor structure would have to be revised and modified. Based on these studies it was concluded that the poor fitting measurement model was not entirely out of sync with previous CFA research on the MBI three factor model. Fitting a bi-factor measurement model may perhaps resolve this issue, but it was out of the scope of this research to do so. Therefore, for the purposes of this research the poor fitting measurement model was not deemed to be such a huge cause for concern.

3.10 Summary

To summarise, the research methodology section listed the study's hypotheses and the research methodology that was used to test the hypotheses, was elaborated upon. More specifically, the research design, sample characteristics and techniques for statistical analysis were discussed. Finally, the psychometric properties of all the instruments used in this study were discussed in detail. The following chapter will present the research results.

CHAPTER FOUR
RESEARCH RESULTS

4.1 Introduction

This chapter presents and reports on the measurement and structural model Partial Least Squares (PLS) results. The previous chapter discussed the validation results of the measurement instruments utilised in this study. This chapter will present and discuss the structural model results that were attained in order to test the hypotheses that were presented in chapters 2 and 3.

4.2 PLS Results: Validating the Measurement (Outer) Model

The outer model measurement model results will be discussed and evaluated below.

4.2.1 Alpha Coefficient, Composite Reliability and AVE values

The alpha coefficients, composite reliability and AVE results of the instruments that were used in this study are presented below in table 4.1 From the results it is evident that all the measurement instruments[11] displayed acceptable internal consistency (i.e. acceptable alpha scores, as well as composite reliability scores), and convergent validity (i.e. acceptable AVE values exceeding 0.50).

Table 4.1

Composite Reliability, Cronbach's Alpha, and AVE

Latent Variable	Manifest Variable	Composite Reliability	AVE
Acute Fatigue/Exhaustion	The Acute Fatigue State Scale (α=0.93) The Recovery State Scale (α=0.85)	0.91	0.84
Burnout	Emotional Exhaustion (α=0.90) Lack of Personal Accomplishment (α=0.83) Depersonalisation (α=0.69)	0.76	0.53
Intrinsic Motivation	Interest/Enjoyment (α=0.79)	0.90	0.65
Psychological Detachment	Psychological Detachment (α=86)	0.91	0.71

[11] As it can be noted above, the technology and flexible work arrangement constructs are not present in the results for the outer model (table 4.1). The technology and flexible work arrangement scores were calculated prior to the fitting of the PLS model (see sections?? And ?? that describe how these scores were calculated). As these manifest variables contained only one total score they could therefore not be included in the outer model results that are presented above (table 4.1).

Recovery	State of being Recovered Scale (α=0.96).	0.97	0.89
Work Pressure	Workload (α=0.89) Time Pressure (α=0.93)	0.93	0.87
Work-home segmentation	Segmentation Preferences (α=0.88) Segmentation Supplies (α=0.70)	0.68	0.55

4.2.2 Discriminant Validity

Establishing discriminant validity is essential since it allows for the confirmation that the hypothesised structural paths do indeed exist and that they do not merely reflect statistical inconsistencies. As a first analysis the Heterotrait-Monotrait ratio (HTMT), proposed by Henseler, Ringle and Sarstedt (2015) was calculated to assess discriminant validity. This method has been noted as the superior method in assessing discriminant validity on the basis that it more reliably detects the lack of discriminant validity in comparison to the other methods (Voorhees et al., 2016). The HTMT approach involves analysing within-scale item correlations and comparing them to another scale's cross-correlations. The cross correlations should be lower than the within correlations. The HTMT method "is an estimate of the correlation between the constructs ξi and ξj, which parallels the deattenuated construct score correlation (Hanseler, Ringle & Sarstedt, 2015, p.121). According to Hanseler et al., (2015, p.121) "if the indicators of two constructs ξi and ξj exhibit an HTMT value that is clearly smaller than one, the true correlation between the two constructs is most likely different from one, and they should differ". The discriminant validity results calculated based on the Heterotrait-Monotrait ratio) are presented in table 4.2.

Table 4.2

Discriminant Validity (Heterotrait-Monotrait ratio)

	Original Sample (O)	**2.50%**	**97.50%**	**Discriminate**
Burnout -> Acute fatigue/exhaustion	0.76	0.62	0.88	yes
Flexible work arrangements-> Acute fatigue/exhaustion	0.32	0.12	0.51	yes
Flexible work arrangements-> Burnout	0.21	0.08	0.44	yes
Intrinsic motivation -> Burnout	0.29	0.33	0.71	yes
Intrinsic motivation -> Flexible work Arrangements	0.52	0.17	0.44	yes

Psychological detachment -> Acute fatigue/exhaustion	0.32	0.42	0.75	yes
Psychological detachment -> Burnout	0.59	0.36	0.62	yes
Psychological detachment-> Flexible work arrangements	0.48	0.04	0.29	yes
Psychological detachment-> Intrinsic motivations	0.12	0.12	0.36	yes
Recovery ->Acute fatigue/exhaustion	0.15	0.71	0.89	yes
Recovery -> Burnout	0.18	0.45	0.71	yes
Recovery -> Flexible work arrangements	0.21	0.05	0.37	yes
Reovery -> Intrinsic motivation	0.20	0.09	0.34	yes
Recovery -> Psychological detachment	0.50	0.32	0.68	yes
Technology -> Acute fatigue/exhaustion	0.20	0.05	0.36	yes
Technology -> Burnout	0.26	0.11	0.43	yes
Technology -> Flexible work arrangements	0.00	0.00	0.18	yes
Technology -> Intrinsic motivation	0.06	0.04	0.18	yes
Technology -> Psychological detachment	0.29	0.17	0.42	yes
Technology -> Recovery	0.19	0.05	0.34	yes
Work pressure -> Acute fatigue/exhaustion	0.82	0.72	0.92	yes
Work pressure -> Burnout	0.51	0.4	0.67	yes
Work pressure -> Flexible work arrangements	0.26	0.06	0.45	yes
Work pressure -> Intrinsic motivation	0.16	0.08	0.32	yes
Work pressure -> Psychological Detachment	0.63	0.49	0.75	yes
Work pressure -> Recovery	0.58	0.42	0.71	yes
Work Pressure -> Technology	0.33	0.19	0.46	yes
Work-home segmentation -> Acute fatigue/exhaustion	0.77	0.39	2.88	No
Work-home segmentation -> Burnout	0.53	0.34	2.30	No
Work-home segmentation ->Flexible work arrangements	0.53	0.25	1.86	No
Work-home segmentation -> Intrinsic motivation	0.61	0.38	2.04	No
Work-home segmentation -> Psychological detachment	0.89	0.61	2.75	No

Work-home segmentation -> Recovery	0.47	0.19	1.88	No
Work-home segmentation -> Technology	0.55	0.27	1.71	No
Work-home segmentation -> Work pressure	0.76	0.46	2.78	No

The results revealed (table 4.2) that discriminant validity was achieved for all the measurement instruments, with one exception. The work-home segmentation instrument failed to achieve discriminant validity from any of the other instruments. However, there were no easily identifiable conceptual similarities between the scale and construct, with all the other constructs implicated in these results. Given these inconsistent results, it was decided to examine the discriminant validity of the work-home segmentation instrument by calculating the Fornell-Larcker criterion and through analysing cross-loadings between this instrument and the other measurement instruments utilised in this study.

According to Henseler (2017, p.190), this form of discriminant validity (i.e. Fornell-Larcker criterion) would be confirmed "through comparing the AVE of constructs and its squared correlations with other constructs in the model. The Fornell-Larcker criterion postulates that a construct's AVE should be higher than all its squared correlations". Through using this approach, it was resultantly found that the squared variance extracted for Work-home Segmentation (0.74) was larger than all the correlations with the other variables (Acute Fatigue/Exhaustion= -0.24; Burnout= -0.22; Flexible work arrangements= 0.04; Intrinsic Motivation= 0.11; Psychological detachment= 0.50; Recovery=0.18; Technology= -0.28; Work Pressure= - 0.39). These results provided empirical evidence of discriminant validity of the scale in question. Therefore, based on all the results reported here, it could be concluded that all the measurement instruments met the criteria of discriminant validity.

4.2.3 Evaluating the Outer Loadings

In order to calculate the outer loadings of the model, we firstly fitted a complete item level model (i.e. observed variables were denoted with only item responses). However, it was found that for certain instruments, such as the MBI, the AVE was too far below 0.5. Given the relatively small sample size there were some concerns regarding the stability of these results. Therefore, an alternative model was fitted in which the observed variables[12] for multidimensional constructs were denoted by subscales scores (e.g. Burnout were represented by the three Burnout sub-dimensions), whilst unidimensional constructs were

[12] As it was mentioned in section 4.2.1; no outer loadings were calculated for the flexible work arrangement scale, nor the technology scale, given the way in which the total score reflecting flexible work arrangements / technology usage were calculated for input in to the final model.

denoted with the item level responses (e.g. psychological detachment). Subsequently, this section will analyse the outer loadings at either a subscale or item level.

In order to determine whether the item or/ subscale loadings of the outer model were to be deemed significant or not, PLS bootstrap analysis was utilised. Therefore, the factor loadings were assessed by analysing the 95% confidence interval. The factor loadings would be classified as being statistically insignificant if zero fell within this interval. However, the factor loadings would be considered statistically significant if zero were to not fall within the interval. The outer loading results for the Acute fatigue/exhaustion construct and its respective subscales are presented below in table 4.3.

Table 4.3

PLS-SEM Outer Loadings for Acute fatigue/Exhaustion subscale

Scale	Subscales	Outer loadings	2.50%	97.50%	Significant
Acute fatigue/exhaustion	Acute Fatigue State Scale (AFtot)	0.92	0.89	0.95	yes
	Recovery State Scale (RStot)	0.91	0.86	0.95	yes

The results reported in table 4.3 revealed that both subscales loaded significantly on to the latent construct of Acute fatigue/exhaustion. The loadings were exceptionally high for both subscales (0.9 for Acute Fatigue State Scale and 0.91 for the Recovery State Scale).

Table 4.4 shows the outer loading results for the Burnout scale (at subscale level). All three loadings on the Burnout latent construct were significant with outer loadings ranging from 0.58 to 0.90. The Depersonalisation subscale (Bpd) achieved the lowest outer loading score of 0.58.

Table 4.4

PLS-SEM Outer Loadings for Burnout (MBI): Subscale Level

Scale	Subscales	Outer loadings	2.50%	97.50%	Significant
Burnout	Emotional Exhaustion (Bee)	0.90	0.65	0.96	yes
	Lack of Personal Accomplishment (Bpa)	0.66	0.73	0.78	yes
	Depersonalisation (Bpd)	0.58	0.27	0.74	yes

Below, table 4.5 presents the outer loading results for Intrinsic Motivation at the item level. Overall, the significant outer loading values ranged from 0.75 (item 7) to 0.93 (item 2). It should be noted that item 4 was deleted from the item pool after the item analysis results (presented in section 3.6.8 of chapter 3). However, as is evident from the results, item 3 has also been deleted from the item pool[13]. Moreover, the second round of PLS results revealed that item 5 failed to significantly load on to the latent construct Intrinsic Motivation. Despite item 5 reflecting an insignificant outer loading value, it was not flagged as a poor item in the item analysis. Based on this, as well as the possible negligible influence of one insignificant item in the current complex model, it was decided that item 5 was to be retained in the item pool.

Table 4.5

PLS-SEM Outer Loadings of Intrinsic Motivation: Item Level

Scale	Subscales/Items	Outer loadings	2.50%	97.50%	Significant
Intrinsic Motivation	Item 1	0.87	0.24	0.92	yes
	Item 2	0.93	0.08	0.97	yes
	Item 5	0.63	-0.08	0.89	no
	Item 6	0.82	0.21	0.90	yes
	Item 7	0.75	0.02	0.87	yes

The outer loading results of the Psychological Detachment scale at the item level are presented below in table 4.6. As shown below, all the items' outer loadings were significant with the outer loadings values ranging from 0.78 (item 2) to 0.90 (item 3).

Table 4.6

PLS-SEM Outer Loadings of Psychological Detachment: Item Level

Scale	Subscales/Items	Outer loadings	2.50%	97.50%	Significant
Psychological Detachment	Item 1	0.87	0.80	0.92	yes
	Item 2	0.78	0.61	0.90	yes
	Item 3	0.90	0.85	0.94	yes

The results of the outer loading values of the Recovery Scale's items (as shown below in table 4.7) revealed that all the items loaded significantly on the latent construct of Recovery. The outer loadings values range from 0.93 (item 4) to 0.95 (items 2 and 3).

[13] Item 3 of the Intrinsic Motivation scale was deleted on the basis of it being flagged as a poor item in the item analysis results and then subsequently being shown to be insignificant in the first round of running PLS.

Table 4.7

PLS-SEM Outer Loadings of Recover: Item Level

Scale	Subscales/Items	Outer loadings	2.50%	97.50%	Significant
Recovery	Item 1	0.94	0.90	0.96	yes
	Item 2	0.95	0.97	0.97	yes
	Item 3	0.95	0.93	0.97	yes
	Item 4	0.93	0.89	0.96	yes

The outer loading results for the Work-Home Segmentation instrument and its respective subscales are presented below (table 4.8). Both subscales (Segmentation Preferences = 0.43 and Segmentation Supplies = 0.96) loaded significantly on the latent construct of Work-Home Segmentation. However, the Segmentation Preferences subscale achieved a much lower outer loading value than the Segmentation Supplies subscale. This should be noted as a limitation of this study.

Table 4.8

PLS-SEM Outer Loadings of Work-Home Segmentation: Subscale Level

Scale	Subscales/Items	Outer loadings	2.50%	97.50%	Significant
Work-Home Segmentation	Segmentation Preferences	0.43	0.08	0.65	yes
	Segmentation Supplies	0.96	0.88	1	yes

Table 4.9 displays the outer loading results of the Work Pressure construct at a subscale level. Both subscales (Time Pressure and Workload) loaded significantly on the latent construct of interest (Work Pressure). Both subscales achieved highly desirable outer loading value scores of 0.92 (Workload) and 0.95 (Time Pressure).

Table 4.9

PLS-SEM Outer Loadings of Work Pressure: Subscale Level

Scale	Subscales/Items	Outer loadings	2.50%	97.50%	Significant
Work Pressure	Time Pressure	0.95	0.93	0.96	yes
	Workload	0.92	0.87	0.95	yes

4.3 PLS Results: Validating the Structural (Inner) Model

The endogenous variables in the model and their respective R^2 values are presented below in table 4.12. The R^2 values ranged from 0.001 (Technology) to 0.48 (Acute fatigue/exhaustion). Technology achieved an extremely low R^2 value accounting for less than

1% of the reported variance in the model. This can be contrasted to Acute fatigue/exhaustion which, achieved the highest R^2 value, accounting for 48% of the reported variance in the Determinants of Psychological Detachment and Burnout model. Moreover, Psychological Detachment follows Acute fatigue/exhaustion in accounting for 44% of variance (with an R^2 value of 0.44). These R^2 results are surprising as it was expected that the highest reported variance would naturally be explained by Burnout which attained an R^2 value of 0.34. Finally, the variable of Recovery attained an R^2 value of 0.22 and therefore accounts for 22% of the reported variance in the model.

The study's respective constructs and their R square values are listed below (table 4.10); while the 12 hypothesised paths (that can be seen in table 4.11) were tested through using the PLS analysis. The significance of these hypothesised paths are presented in table 4.11, where it can be noted that only 7 of the 12 paths were found to be statistically significant. Figure 4.1 indicates the significant paths in red.

Table 4.10

R square values for the Determinants of Psychological Detachment and Burnout model

Variable	R square
Acute fatigue/exhaustion	0.48
Burnout	0.34
Psychological Detachment	0.44
Recovery	0.22
Technology	0.001

Table 4.11

Path Coefficients

Path	Path coefficient	2.50%	97.50%	Significant	P value from T-test
AFE_WP Moderator-> Psychological detachment	0.15	0.04	0.26	yes	0.01
Acute fatigue/exhaustion -> Psychological detachment	0.14	-0.32	0.05	no	0.14
Flexible work arrangements -> Technology	0.01	-0.16	0.18	no	0.93
Intrinsic motivation -> Psychological detachment	0.06	-0.17	0.19	no	0.44
Intrinsic motivation -> Technology	-0.03	-0.21	0.20	no	0.75
Psychological detachment-> Recovery	0.47	0.31	0.62	yes	0
Recovery-> Burnout	-0.58	-0.66	-.50	yes	0
TECH_WHS Moderator-> Psychological Detachment	-0.18	-0.31	0.00	yes	0.02
Technology-> Psychological detachment	-0.10	-0.21	0.04	no	0.1
Work pressure-> Acute fatigue/exhaustion	0.69	0.60	0.78	yes	0
Work pressure-> Psychological Detachment	-0.21	-0.37	-0.06	yes	0.01
Work-home segmentation -> Psychological detachment	0.29	0.18	0.42	yes	0

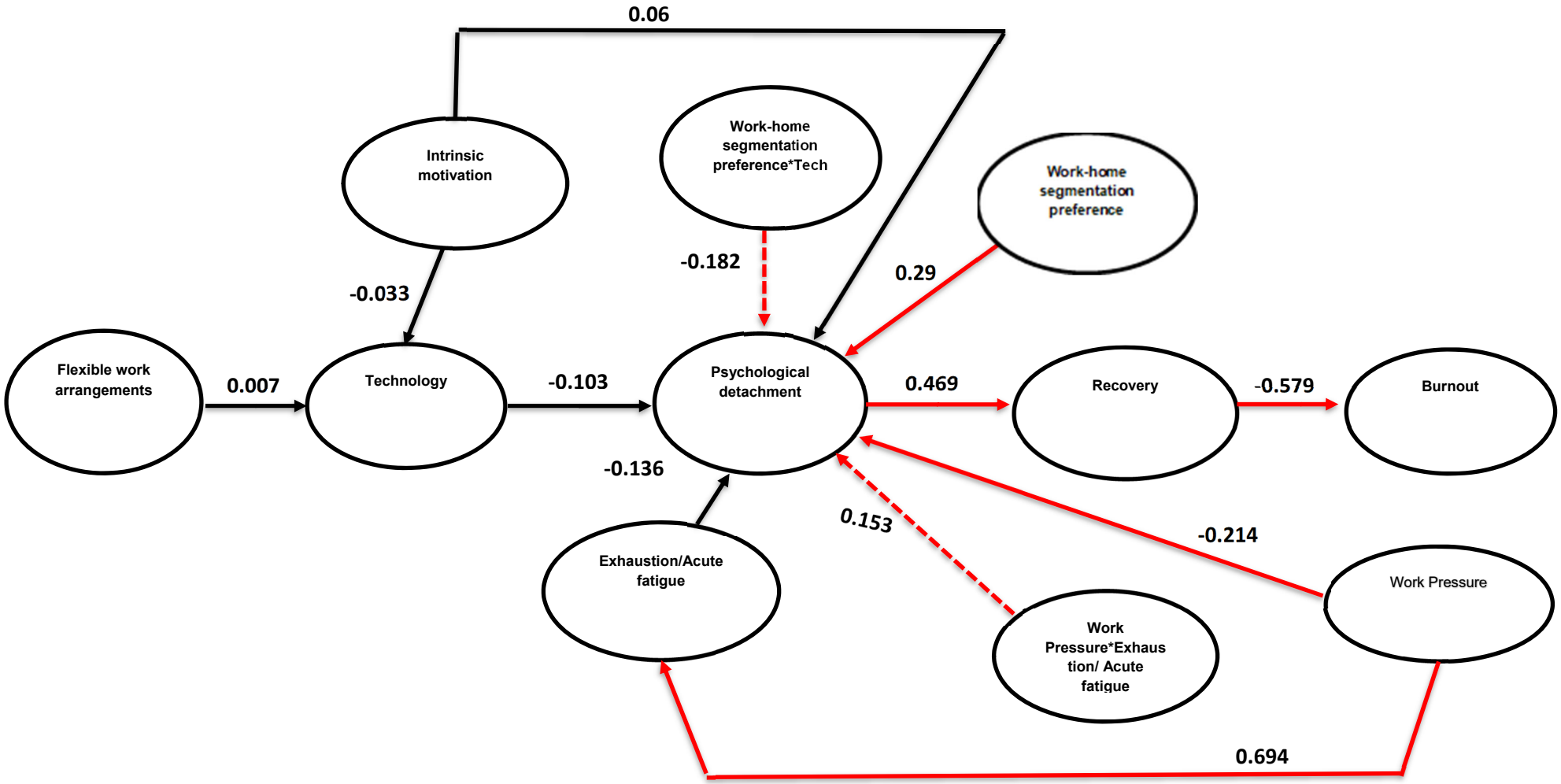

Figure 4.1 The final Determinants of Psychological Detachment and Burnout Structural Model with significant hypothesised effects

4.4 Interpreting the Proposed Hypotheses

Hypothesis 1: Recovery has a negative linear relationship with burnout.

Hypothesis 2: Daily psychological detachment has a positive linear relationship with recovery.

The results revealed that both hypotheses 1 and 2 achieved statistically significant path coefficients of -0.58 (hypothesis 1) and 0.47 (hypothesis 2), respectively. Moreover, the hypothesised direction of the relationships were supported by the results. That is, Recovery was shown to have a negative relationship (-0.58) of a medium strength magnitude with Burnout. This result was to be expected, as it was argued that the more a person is 'high' on the state of being recovered, the less likely they will be susceptible to experiencing the phenomenon of Burnout (Geurts & Sonnentag, 2006). Moreover, the relationship between Psychological Detachment and Recovery obtained a positive value (0.47), also with a medium strength magnitude. According to Bakker, Sanz-Vergel, Rodriguez-Munoz and Oerlemans (2014), psychological detachment is useful in that it allows for an individual to avoid stressful situations and would subsequently result in the restoration of depleted resources. In this way, the results suggested that psychological detachment or the ability to mentally 'switch off' from work after the core working hours have been completed would naturally result in the person experiencing a state of feeling 'recovered'. Therefore, it is concluded that hypotheses 1 and 2 were corroborated by the results.

Hypothesis 3: Daily work-related technology use has a negative linear relationship with daily psychological detachment.

Hypothesis 4: Work-home segmentation preferences has a positive linear relationship with daily psychological detachment.

Hypothesis 5: Work-home segmentation preference will moderate the relationship between daily work-related technology usage and daily psychological detachment.

As depicted in table 4.11; hypothesis 3 (-0.10) failed to achieve a statistically significant path coefficient. This hypothesis intended to substantiate the notion that the use of technology for work-related purposes would in fact prevent an individual from mentally distancing themselves (and thus subsequently psychologically detaching) from work. Chapter 2 argued that an important facilitating factor in the experiencing of psychological detachment would revolve around the individual engaging in meaningful off-job activities and/or restorative environments (Sonnentag, 2012). However, if the individual were frequently using technology for work purposes in their after- work hours; this would prevent the individual from engaging in activities

that would facilitate the employee mentally distancing and disengaging from work and its related stressors. However, given the results of this particular study, there is insufficient evidence to support such an argument.

According to the results in table 4.11, hypothesis 4 was supported with a statistically significant path coefficient of 0.29. The predicted direction of the relationship was also substantiated by the results. In this study it was argued that work-home segmentation strategies (the employee's active choice of employing work-home segmentation boundaries to separate their personal and work lives) would naturally hold an influence on the individual's ability to psychologically detach. According to Park and Jex (2011), these boundaries would be strategically created by individuals in order to manage multiple life roles and focus on other areas of life that has less to do with work. In focussing on other core areas of one's life or engaging in non-work-related activities after the completion of the core working hours, it was hypothesised that this would allow for mental detachment from the demands of work. Given that hypothesis 4 achieved statistical significance, it can be deduced from the results that the utilisation of such segmentation strategies would indeed seem to allow an individual to engage in the psychological detachment process.

The results revealed that hypothesis 5 were also supported, as a statistically significant, albeit small (-0.18), effect emerged for work-home segmentation preference as a moderator in the technology, psychological detachment relationship (table 4.11). Therefore, the argument that WHSP moderates the relationship between technology use and psychological detachment could be corroborated. The logic of the statistically significant moderating relationship is depicted below in figure 4.2. The graph suggests that when people do not have strict delineated boundaries between their work and home life (low WHSP), the relationship between technology use and psychological detachment is positive. In other words, the more technology the individual uses for work purposes after hours, the more they psychologically detach. These results lead one to suggest that individuals who do not have a strong preference to separate their work and home life, hold less of a stressful association to the use of technology outside of working hours resulting in them being able to mentally distance themselves from work in any case. However, when the individual's WHSP is high (i.e. these individuals favour an orientation of keeping work and home separate) the results suggest that technology use then becomes a "burden" in the sense that there is a strong negative correlation between technology use and psychological detachment. In this regard, technology use after the core working hours would significantly diminish their ability to mentally detach from work. In all, it seems that the association that employees place on technology use after

the core working hours (and their orientation to manage technology use or not) holds an influence on such individual's ability to mentally detach.

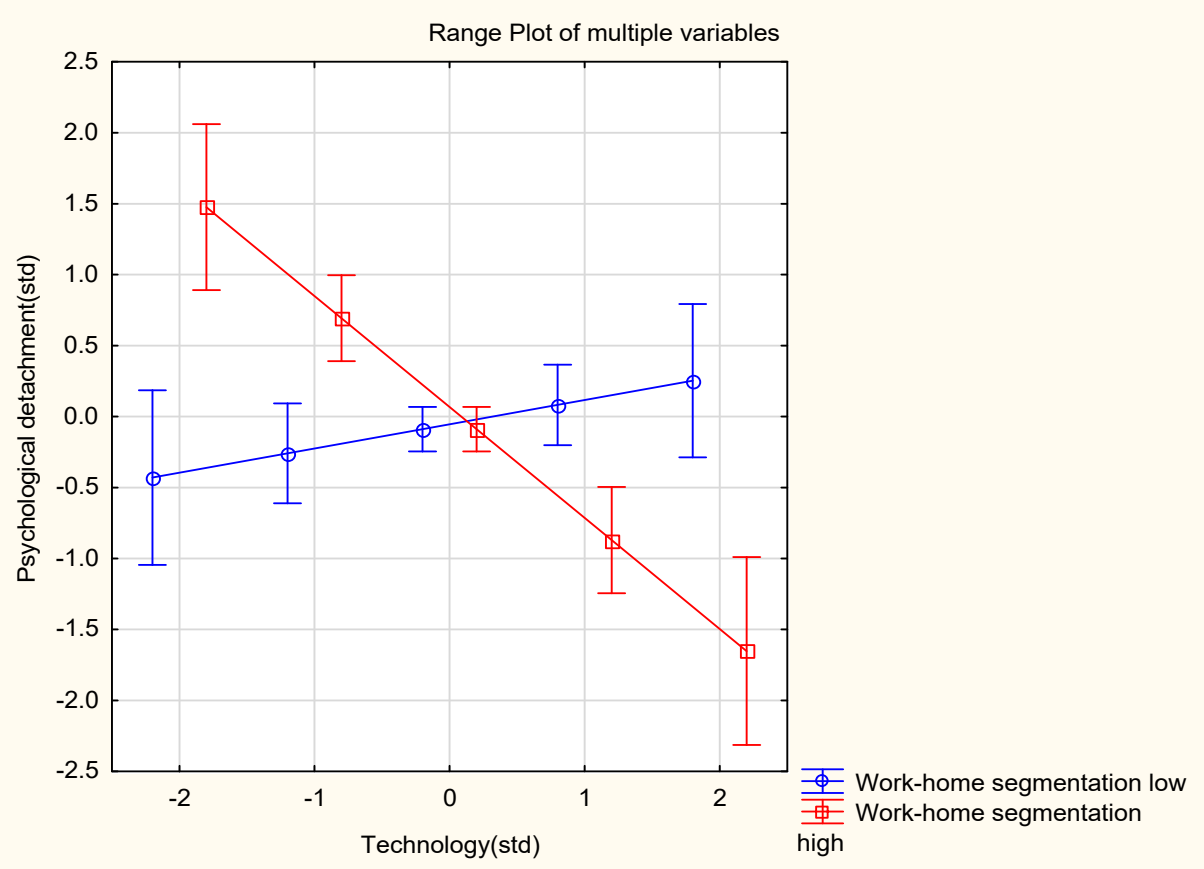

Figure 4.2: Graph representing the moderation effect of WHSP on the relationship between technology and psychological detachment

Hypothesis 6: Flexible work arrangements has a positive linear relationship with daily work-related technology use.

Hypothesis 7: Work pressure has a negative linear relationship with daily psychological detachment.

Hypothesis 6 (-0.10) failed to be corroborated by the results depicted in table 4.11. It was argued in this study that an academic employee usually has access to flexible working arrangements (Kelly & Moen, 2007). It was, furthermore, also argued that much of an academic's work load is "private and unrecognised" where much of the work is carried out in the home domain due to excessive workloads and high professional standards (McInnis, 1992, p.10). Moreover, according to Almer and Kaplan (2000), flexible work arrangements can place employees under further pressure to work over the core traditional working hours given that

they would have less visibility in the physical work place. Therefore, it was argued that an academic employee who has excessive workloads (and thus will subsequently continue to work after their core working hours have been completed) and who also has access to flexible work arrangements; will naturally (and more frequently) use more technology for work purposes in non-work hours. Since academic work would be conducted out of the office environment through flexible work arrangements; a greater variety of technology may also be used to get the work done (other than the sole computer used in their office). Despite such arguments, the results of this study failed to provide evidence to corroborate them.

According to table 4.11, hypothesis 7 achieved a statistically significant path coefficient (-0.21); while the hypothesised direction of the relationship was also supported by the results. In other words, the results revealed support of the negative relationship between Work Pressure and Psychological Detachment. The magnitude of this relationship was small. This result was to be expected, as it was argued that the higher the work pressure experienced by the employee, the less likely they will be able to psychologically detach or mentally distance themselves from work. Therefore, the influence of work pressure on psychological detachment and burnout is an obvious linkage that should not be overlooked in the management of people in organisations and institutions (Sonnentag & Bayer, 2005)

Hypothesis 8: Exhaustion/acute fatigue has a negative linear relationship with daily psychological detachment levels.

Hypothesis 9: Work pressure has a positive linear relationship with exhaustion/acute fatigue.

Hypothesis 10: Work pressure moderates the relationship between exhaustion/acute fatigue and daily psychological detachment.

The results revealed (table 4.11) no support for a statistically significant relationship between exhaustion/acute fatigue and daily psychological detachment. Hypothesis 8 was therefore not supported by the results. The argument behind the hypothesis was that an exhausted individual would be more likely to ruminate, worry and stress about the work demands that they are unable to meet on the basis of their fatigue and exhaustion. Therefore, it was suggested that exhaustion could create a repetitive unproductive cycle that would render the person unable to fully mentally detach from work and its associated stressors (Sonnentag et al., 2014). From a physiological perspective, it was also argued that exhaustion results in cognitive lethargy, with this lethargy influencing employee outputs and performance levels;

which could also lead to ruminating about work issues after working hours (Schmidt et al., 2007). However, this logic was not statistically corroborated by this study.

In contrast to hypothesis 8, hypothesis 9 achieved a statistically significant path coefficient of 0.69 (table 4.13). Furthermore, the hypothesised direction of the relationship was supported by the results. In other words, Work Pressure has a strong positive relationship with exhaustion/acute fatigue. Therefore, the arguments presented in this study in relation to the effect of work pressure on exhaustion/acute fatigue was corroborated. That is, that the more work pressure an employee is under; the more exhaustion and fatigue they will experience. If their work pressure is too great for the individual to recover from the exhaustion; this relationship would perpetuate.

Furthermore, the results revealed support for the moderating effect of work pressure in the relationship between exhaustion/acute fatigue and psychological detachment (hypothesis 10). In other words, the path coefficient (0.15) was statistically significant. The graph displayed below (figure 4.3) reflects the underpinnings of the statistically significant results of the moderation effect of work pressure on exhaustion/acute fatigue and psychological detachment. From the graph it is evident that for the one group, when work pressure is low, the effect of acute fatigue/exhaustion on psychological detachment is more severe, then when work pressure is high. It can also be noted that the drop in these individual's psychological detachment levels is more severe, too. This can be contrasted to the group that has high work pressure where, according to the graph, when their exhaustion rises, they do not experience such a negative effect on their psychological detachment levels. Intuitively, one would have argued it the other way around. Perhaps this suggests that individuals that work under high pressure, already cope with it well and therefore as their acute fatigue/exhaustion increases, they are able to more easily psychologically detach due to the fact that they have acquired the necessary coping resources to work under high pressure. The low work pressure group may not have the same coping resources (due to not having to have to cope regularly with high work pressure) and therefore when their acute fatigue/exhaustion rises, they experience the negative effect on their psychological detachment levels as being more severe.

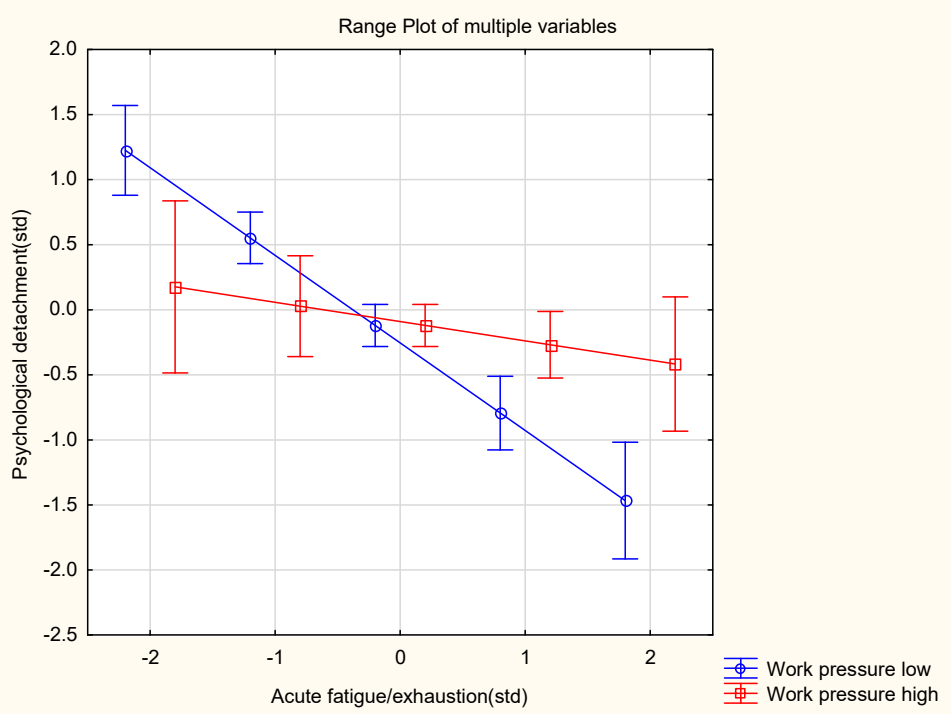

Figure 4.3: Graph representing the moderation effect of work pressure in the relationship between exhaustion/acute fatigue and psychological detachment

Hypothesis 11: Intrinsic motivation has a negative linear relationship with daily psychological detachment.

Hypothesis 12: Intrinsic motivation has a positive linear relationship with daily work-related technology use.

According to Coaldrake & Stedman (1999) and Kacmar and Ferris (1989), academic employees have been strongly acknowledged to be highly intrinsically motivated. It was further argued that intrinsically motivated employees' overall satisfaction with their job does not seem to deteriorate in the presence of job-stress and dissatisfaction with extrinsic aspects (Kacmar & Ferris, 1989). Hypothesis 11 predicted that the more intrinsically motivated the individual is; the less likely they will be able to mentally detach from work after completing their core working hours. The underlying logic here is that the individual who is internally driven and motivated to not only complete their workload, but also succeed in their work; would naturally be more work focussed regardless of the time of day (whether it be during the working day or in the after-work hours). However, this argument was not supported by the results since the hypothesised path co-efficient was found to be statistically insignificant (0.06) and therefore hypothesis 11 was not supported by the results.

Moreover, it was also argued that an intrinsically motivated individual may, in addition to their core working hours, continue working in their after-work hours. In order to work at home or outside of the workplace, the intrinsically motivated individual would naturally turn to various technological platforms in order to achieve this (hypothesis 12) (Coaldrake & Stedman, 1999). Therefore, it was argued that the more additional work hours an intrinsically motivated individual would work; the more technology they would use in order to achieve this purpose. However, according to the results in table 4.11, the path coefficient of hypothesis 12 (-0.03) has been found to be statistically insignificant, and therefore no support for the relationship between intrinsic motivation and daily work-related technology was evident.

4.5 Summary

This chapter primarily presented and discussed the measurement and structural model Partial Least Squares (PLS) results. The outer-loadings of the subscales were evaluated in detail. This was followed by an in-depth discussion of the results pertaining to the proposed hypotheses for this study. The following (and final) chapter will delve into a discussion of the research results. The limitations of this study, recommendations for future research, as well as managerial implications will be discussed in full.

CHAPTER FIVE
DISCUSSION

5.1 Introduction

This study utilised the theoretical foundations of Conservation of Resource (COR) Theory to argue for a clear psychological process driving psychological detachment, recovery and burnout. This process embodies the COR theory assumptions of resource loss and resource gain. That is, it was argued that the ability to psychologically detach from work and work-related issues represents the opportunity for the replenishment and recovery of resources in order to prevent the onset of burnout over time. These theoretical understandings led to the formulation of the research initiating question which asked why variance in psychological detachment, and ultimately burnout, would exist amongst academic employees. Moreover, this study specifically aimed to create a complex model of some of the possible determinants of psychological detachment and aimed to practically explicate these relationships. Therefore, the primary research objective of this study was to develop a structural model that depicts the determinants of psychological detachment and its relation to the burnout construct.

In response to the research initiating question, structured arguments were compiled through active theorising and a literature study which were presented in chapter 2 of this thesis. Through attempting to answer the research initiating question, these arguments were compiled into a structural model that visually represents the determinants of psychological detachment and their respective hypothesised relationships. On the basis of the proposed and hypothesised structural model chapter 3 delved into the research methodology that was used to empirically evaluate the *Determinants of Psychological Detachment and Burnout Structural Model*. The model was tested with PLS and the results of the analyses were presented and discussed in chapter 4.

The final chapter of this study, chapter 5, delves into and discusses the results of this study. Chapter 5 intends to allow readers to make inferences regarding whether the structural model has been successfully explicated in such a manner as to add understanding to the phenomena under study. This chapter also delves into the limitations of the study, as well as suggesting recommendations for future research in psychological detachment, recovery and burnout. Since research in Industrial Psychology should be practically applied to business and work settings, managerial implications (on the basis of the findings of this research) are also suggested and recommended.

5.2 Results

Burnout is a phenomenon that has been widely researched in various industries and service provisions, especially teachers and academic employees (Lackritz, 2004). According to Harrington, Bean, Pintello and Mathews (2001), there are a number of major influences on burnout. Examples of such influences include workload, lack of control, lack of being part of a community and poor and unequal remuneration, to name a few. However, the influence of psychological detachment has been widely acknowledged to play an essential role in the stressor-strain dynamic that ultimately leads to burnout (Sonnetag, Kuttler & Fitz, 2010). The act of mentally distancing oneself from work and its associated stressors (not just physically distancing oneself), would cater to a state of recovery which would prevent the onset of burnout in the long-term (Sonnentag & Bayer, 2005). With psychological detachment and its determinants being the focal point of this study; the empirical results related to the numerous statistically significant hypothesised relationships obtained in this study, will be discussed below.

5.2.1 Interpretation of the inner model results

With the focus of this dissertation being centred on psychological detachment and its link to the burnout phenomenon, it was found that the self-reported feeling of recovery proved itself to be an important mediator in the psychological detachment and burnout relationship. This study argued that recovery is an outcome of the individual being able to psychologically detach from work-related stressors. In other words, psychological detachment provides an effective mechanism for employees to regain (recover) the energy resources they have lost through experiencing their day-to-day work pressures in the work environment (Sonnentag & Fritz, 2007). Therefore, an individual who would be constantly unable to mentally detach from their work after their working hours had been completed; would subjectively feel less recovered over time. According to Sluiter et al., (2003), a lack of recovery would play a major aetiological role in the person feeling psychologically overloaded. Moreover, this lack of recovery would culminate into the individual experiencing burnout in the long-term (Sluiter,de Croon, Meijman and Frings-Dresen, 2003). It was this argument that lead to the conclusion that recovery would have an inverted/negative relationship to burnout. That is, the more the person feels recovered through the mechanism of psychological detachment; the less likely the individual will experience burnout. According to the research results, the hypothesised direction of the relationship was confirmed to be negative (i.e. that low recovery scores would indeed be associated with high burnout) (- 0.58; $p < 0.05$). These statistically significant results corroborate the findings of Sluiter et al., (2003) where it was argued that if the individual did not have sufficient opportunities to recover from the day's work load and stressors; the overload would develop and contribute to burnout. In all, without an individual being able to

recover and thus replenish their resources on a daily basis; burnout could be a natural long-term consequence.

Moreover, psychological detachment and its positive linear relationship to recovery was also statistically tested. This hypothesis was also proven to be statistically significantly corroborated (0.47; $p < 0.05$). The COR theory (Hobfoll, 1989) provides a strong theoretical platform to understand the basic dynamics between psychological detachment and the recovery (i.e. is the state of feeling recovered). The theory emphasises the importance of 'resource investment'- how the individual must make sure to invest and reinvest in their own personal resources in order to protect their health, well-being and ultimate longevity. Through the loss of energy in engaging in daily activities; energy would naturally need to be replenished and recovered in order to accomplish the following day's activities and challenges (Westman et al.,2004). According to Binnewies, Sonnentag and Mojza (2009), one way in which individuals can replenish their resources and subsequently experience a 'state of being recovered' would be engaging in leisurely or social activities and experiences that allow the individual to "mentally switch off from work". In other words, the more the person mentally detaches from work (i.e. is relaxed and not tense); the more the individual experiences a state of recovery (Binnewies, Sonnentag and Mojza ,2010; Sonnentag & Fritz, 2007; Fritz & Sonnentag, 2005; Zijlstra & Cropley, 2006).

The results, therefore, supported the notion that psychological detachment as a mechanism of recovery did indeed predict actual feelings of recovery, which in turn predicted burnout. It should be noted, however, that this is a cross-sectional study and that the PLS methodology, strictly speaking, does not allow one to make a conclusive judgement about the causality of the predictors in the model. However, the results do provide some insight into the notion that psychological detachment as a resource would seem to lead to higher levels of recovery, which should, over time, lead to less experienced burnout. These effects, however, should ultimately be tested with a longitudinal design (and some feedback loops) in order to conclusively judge whether a resource gain spiral is in fact initiated with psychological detachment. Despite the research results depicting psychological detachment to have a statistically significant relationship to burnout; there was no significant empirical evidence to corroborate the relationship between technology use and psychological detachment.

It was argued that the persistent use of technology for work-related purposes would increase the pressure that the individual would feel to continuously engage with work-related matters. Resultantly, the individual would have found it to be increasingly difficult to mentally distance themselves from work (Chelsey, 2005; Derks et al., 2014). However, the study did not

substantiate the argument that daily and frequent technology use for work activities (after the core working hours have been completed) would have a negative impact on the experience of psychological detachment. This may be because technology use has a more complex relationship to psychological detachment than conceptualised in this model with a simple direct effect. For example, work-home segmentation preferences was found to statistically significantly moderate the relationship between technology usage and psychological detachment. The study's results suggest that technology usage does have an effect on psychological detachment depending on the person's preference as to how they segment their work and home domains. The results lead to the conclusion that individuals who had a high need for work and home segmentation (those who were high on segmentation preferences) possibly experience a negative association with technology use after working hours, which would seem to then render them less able to psychological detach form work. Moreover, the individuals who did not have strict delineated boundaries between their work and home life (low WHSP), reported a positive relationship between technology use and psychological detachment, suggesting that as these individuals use more technology, it seems to assist them in psychologically detaching. The statistical significance of work-home segmentation preferences in the relationship between technology usage and psychological detachment highlights the fact that there may be other factors that may also influence this relationship, and therefore underscores the notion that a direct relationship (as was also predicted in this study and found to be insignificant) may not be the most probable approximation of the impact of technology use on psychological detachment.

Further to the moderating effect of work-home segmentation preference in the technology use, psychological detachment relationship, the results further revealed support for a direct positive relationship between work-home segmentation preference and psychological detachment. Work-home segmentation preference can be understood as 'the degree to which one prefers to separate various aspects of work and home from each other by creating more or less impermeable boundaries around the work and home domains' (Kreiner, 2006, p.486). On the basis of this definition, it can be argued that this result suggests that psychological detachment can be achieved through individuals having a strong preference to segment their work and home lives. With a stronger preference to segment their work and home lives; these individuals would more actively embrace a strategy that would prevent the "spill-over" between their work and personal lives. That is, the individual's preference to actively segment their work and non-work-related activities would have an effect on their ultimate ability to psychologically detach. An employee that would go home after their core-working hours and engage in non-related work activities (on the basis of their preference for segmentation) would be more able to mentally distance themselves from their day-to-day work happenings (Park & Jex, 2011). In

all, the direct link between segmentation preferences and psychological detachment has been argued and validated in this study.

Another focal determinant that was emphasised in this study is flexible work arrangements. Flexible work arrangements is a prominent characteristic present in academia. Therefore, it was argued that access to, and use of such arrangements could perhaps increase daily work-related technology use for academics. For example, it was argued that the typical academic employee has access to flexible work arrangements, but also usually has a vast amount of work to complete after their core working hours (Almer & Kaplan, 2000; McInnis, 1992). It is in this way that the academic employee, through having shorter working hours at work, would naturally need to utilise technology in their home domain to complete their heavy workload. However, the results revealed that this relationship was not support by the results. What can possibly be deduced from this insignificant result is that, similar to the direct relationship of technology use on psychological detachment, this relationship may be more complex than simply being a direct relationship. In the recommendations for future research section, more elaboration is provided on avenues of future research pertaining to explicating the complexity of this relationship.

Evidence of a significant direct negative relationship between work pressure and psychological detachment emerged from the results. This result has been supported by numerous pieces of literature and makes intuitive sense (Brosschot, Pieper & Thayer, 2005; Geurts & Demerouti ,2003; Sonnentag & Bayer, 2005). Not only is there a vast amount of literature on the negative effects of work pressure on employees; it also maked intuitive/logical sense to incorporate the construct in this research. The work pressure construct had an intuitive logical appeal because it is a construct that can easily be reflected on in one's own personal and work life. Increased daily work pressure is often known to eat in to the 'free' time that employees have for themselves once their workday has been completed. Logically, this could happen either through the individual worrying or ruminating about their excessive work pressure during their home hours after a full day of work, or through actively having to work longer hours after the core working hours have been completed. On this basis, it becomes obvious to note how work pressure would influence whether an employee is able to mentally distance themselves from work-related stressors and why it was necessary to incorporate it in to this study's structural model.

In this study, work pressure comprised of both workload and time pressure. Workload would naturally culminate into work pressure on the basis that the individual would have such vast quantities of work that could not reasonably be finished on a given day of work. Therefore,

employees would naturally work longer hours in order to finish the work according to the designated time pressures. It was argued that this workload would creep into the hours where the individual should normally be able to mentally distance themselves from work (Sonnentag & Bayer, 2005). Time pressure was argued to have a more direct physiological strain on the individual (such as creating higher cortisol levels) rendering the individual unable to psychologically detach from work and its pressures (the lack of time to get the work done) (Sonnentag & Fritz, 2006). This finding was corroborated in a different study where it was shown that an increase in the cortisol stressor delays recovery for the individual concerned (Sonnentag & Fritz, 2007). According to Geurts and Sonnentag (2006), time and work pressure creates sustained physiological activation which, in turn, impedes the recovery process. Therefore, in line with both literature and the study's empirical findings, work pressure has a significant negative effect on psychological detachment.

In this study, work pressure was not only theorised to hold a direct relationship to psychological detachment, but it was also believed that the construct, in relation to its effect on psychological detachment, would be mediated through exhaustion/acute fatigue. In other words, it was argued that excessive work pressure would naturally lead the individual to feel exhausted which would, over time, decrease their capability to psychologically detach from their work stressors and experiences. Since the study's findings indicated a statistically significant relationship between work pressure and exhaustion; the aforementioned argument (exhaustion mediating the relationship between work pressure and psychological detachment) would be plausible. However, given this study's results, the proposed mediating effect of exhaustion/acute fatigue was not evident because there was no direct relationship that was found between exhaustion/acute fatigue and psychological detachment. Despite exhaustion/acute fatigue failing to mediate the relationship between work pressure and psychological detachment; it was instead found that work pressure was statistically significantly moderating the relationship between exhaustion and psychological detachment. Therefore, work pressure was found to statistically significantly intensify the negative relationship between exhaustion/acute fatigue and psychological detachment. This finding is in line with the theoretical arguments that were presented in this study.

That is, as depicted within the theoretical foundation of COR theory, exhausted employees feel they do not have sufficient resources to match the job demands/stressors (Sonnentag et al., 2014). It was argued that this would especially be in the case of great time pressure and high workloads (i.e. high work pressure). The effects of both time pressure and high workloads has a dreary effect on the employee in terms of continuous activation levels of stress, and a fear that he/she will be unable to meet the work deadlines. Resultantly, exhausted employees

with great time pressures and high workloads will find it increasingly difficult to psychologically detach. Therefore, an exhausted employee who would feel they do not have the energy resources to match the energy demands of their work would feel exasperated if they also had high work pressures, too. This would further detract from the individual's ability to mentally distance themselves from work.

Another important predictor within the context of this study was intrinsic motivation and its relation to psychological detachment. Through engaging in literature studies on personality types and academic employees; intrinsic motivation was a characteristic that was repeatedly reiterated in research papers. In other words, academic employees are known to be highly intrinsically motivated towards their work (Kacmar & Ferris,1989; Kinman,1998; Winter &Sarros,2002). Literature (as well as personal discussions with academic employees and teachers) also reflected that these individuals are passionate about the work that they do; with this passion leading academic employees to even work longer hours than need be. This passion and satisfaction that is derived from academics engaging in their work is well documented in literature. According to Barkhuizen et al (2014), no matter the large amounts of pressures academic employees endure in their jobs; their intrinsic motivation allows for a large degree of satisfaction that is gained through their work.

In line with the above, this study argued that due to many academic employees being inherently motivated (and experiencing satisfaction from their work); the less likely they will be able to mentally distance themselves from their work after their core working hours have been completed. However, this line of reasoning was not substantiated by this study's findings. This could be due to the fact that the effects are not direct or that the relationship is more complex in nature. According to Fernet, Guay, Senecal and Austin (2012), intrinsic motivation is indeed correlated to academic employees' long-term well-being. However, it is also noted that the effect of intrinsic motivation of well-being is often moderated by various internal and external factors, including the individual's level of self-efficacy, and or the characteristics of the work environments academic employees work in (Fernet et al., 2012). For example, the intrinsic motivation levels of an academic employee would be amplified if their work environment encourages a certain level of autonomy in how their work is conducted. However, an academic employee who works in a controlling environment where goals and time restrictions etc. are imposed on them could experience a dwindling sense of intrinsic motivation (Fernet et al., 2012). Self-efficacy and intrinsic motivation also present an interesting relationship in literature (Deci, Vallerand, Pelletier & Ryan, 1991). According to Deci et al., (1991), feelings of competence facilitate positive and intrinsic motivations. If the individual feels like they are capable of successfully engaging in a task; their intrinsic enjoyment of the task is also

heightened (Deci et al., 1991). This has interesting implications for how future studies can investigate the relationship between self-efficacy, intrinsic motivation and psychological detachment. Intrinsic motivation as either a moderation and/or mediation effect of the relationship between self-efficacy and psychological detachment could be explored. Therefore, the influence of intrinsic motivation on psychological detachment should not be denounced but rather be more complexly explored in future studies.

This study also proposed for there to be a direct positive relationship between intrinsic motivation and the frequency of technology usage. It was argued that intrinsically motivated individuals would work beyond their core working hours and, in this way, would naturally turn to frequently utilising technology in their home environments (Coaldrake & Stedman,1999). Literature also produced interesting insights into how intrinsically motivated people tended to have a greater 'computer playfulness'; where technology would be more frequently used as efficient and effective means to complete work (Venkatesh, 2000). Given that this hypothesis was not shown to be significant; it can be deduced that the proposed direct effect between the variables was narrow-sighted. For example, this relationship could be moderated by the extent to which employees have access to technology in their home environments. Furthermore, the argument presented in this study did not take in to account that technology in home environments could be shared between family members. This could stand to limit the overall access to technological gadgets to engage in work activities after the working hours have been completed. Moreover, it is also important to note that not all academic work is technology focussed. For example, the marking of pupils' work can be done manually and without the use of a computer to do so. Therefore, a potential variable that would influence the relationship would be the *type* of work that is being engaged in within the home domain after the core working hours have been completed. In all, future studies should thus explore the influence of intrinsic motivation on technology by taking into account indirect effects that may be affecting the proposed relationship.

5.3 Recommendations for Future Research

The *Determinants of Psychological Detachment and Burnout Structural Model* was developed in order to gauge the underlying variables that influence psychological detachment, and ultimately burnout, of academic employees. The aim of the study was to identify and understand the determinants of psychological detachment in order to contribute to burnout prevention literature and to provide insights as to how psychological detachment (and the encouragement thereof) could practically be implemented in work environments in order to prevent burnout. However, it is important to note that the structural model representing the relationships between the determinants of psychological detachment and burnout are mere

approximations of the underlying nomological structure of this phenomena. Therefore, in evaluating the nomological network of latent variables created for this study; the inclusion or exclusion of certain variables or pathways in the model should be assessed and considered. Therefore, the following section will delve into the possible modifications to this study's hypothesised pathways.

The results of this study revealed that 7 out of the 12 hypothesised relationships were shown to be statistically significant ($p < .05$). It is argued here that insignificant results (5 paths) could be attributed either to the use of poor/inaccurate measurement scales, or inaccurate theoretical arguments. Chapter 4 presented the measurement model (outer model) results. Through utilising Partial Least Squared (PLS) it was shown how the outer loadings of each measurement scale proved to be statistically significant, with all subscales loading significantly on their respective latent variable of interest. Each scale achieved good internal consistency, convergent validity and discriminant validity. Given the clear lack of measurement problems, it makes sense that the theoretical arguments underpinning the insignificant hypothesised relationships should be called into question.

Given the lack of measurement problems found in this study; the theoretical arguments presented in chapter two should be assessed and critiqued. Future research should incorporate new and/or additional variables into this study's structural model. There is also a need for future literature studies to provide new causal linkages between new and existing constructs.

This study presented the technology usage construct as a hindrance to the psychological detachment process. It is important to note that the study has also emphasised that the focus of the construct has been on the *frequency* with which technology was being used by academic employees for work purposes after their core working hours had been completed. In other words, it was proposed that an unhealthy usage of technology to complete work after the working hours would naturally have a negative effect on the individual's ability to mentally distance themselves from work stressors. Unfortunately, the technology usage variable in the structural model failed to achieve significance in two separate hypotheses. However, the relationship between technology use and psychological detachment was moderated by work-home segmentation preferences. Hypothesis 3 predicted that technology had a negative linear relationship to psychological detachment; while hypothesis 6 predicted that flexible work arrangements had a positive linear relationship to technology. It was surprising that hypothesis 3 did not achieve a significant result, as previous studies have indicated how technology use is extending work hours to home hours; with this naturally leading one to question how able

the employee would be able to mentally detach after work hours (Barber & Jenkins,2014; Chelsey, 2005; Greenhaus & Beutell,1985; Sonnnentag,2012). Moreover, the failure of hypothesis 6 to achieve statistical significance (that flexible work arrangements has a positive linear relationship to technology) may be due to the fact that it is not a simple linear relationship. Further research should be conducted as to whether there may be moderators and mediators that influence this relationship. Research should take into account that academic work could be carried out through avenues that does not require the use of technology. Therefore, the relationship between flexible work arrangements and technology could perhaps be moderated by the type of work that is engaged in by the academic employee in those hours. Given the fact that flexible work arrangements is a typical work benefit offered to academic employees; there is a need for the variable to be addressed through further research and statistical analysis.

The variable of exhaustion/acute fatigue proved to be an intriguing variable that most definitely requires further research and understanding as to how it influences the nomological network of the determinants of psychological detachment. The postulation of acute fatigue/exhaustion and its direct negative linear relationship to psychological detachment proved itself to be statistically insignificant. However, acute fatigue/exhaustion and its relation to psychological detachment was shown to be significantly moderated by the work pressure variable. This result suggests that acute fatigue / exhaustion does not seem to exert a main effect on psychological detachment, but that the effect is rather moderated through work pressure, providing a more nuanced understanding of the effect of acute fatigue / exhaustion on psychological detachment.

Finally, no support for the two hypotheses related to the intrinsic motivation variable were obtained through the results. That is, hypothesis 11 (Intrinsic motivation has a negative linear relationship with psychological detachment) and hypothesis 12 (Intrinsic motivation has a positive linear relationship to technology use) were not supported by the results. It is suggested that future research, instead of looking at this relationship as a direct relationship, could rather focus on how intrinsic motivation aids the psychological detachment process through acting as a supporting mechanism or buffer in the psychological detachment/burnout phenomenon. Self-determination theory could also provide further insights into the intrinsic motivation and psychological detachment relationship. According to Ryan and Deci (2000) intrinsic motivation may become diminished when the person feels they are losing autonomy if there are, for example, strict deadlines and directives. In contrast, having choices and opportunities are argued to enhance individual's intrinsic motivations (Ryan & Deci,2000). Therefore, future studies should encompass the moderating influence of the type of work

environments employees work in and how such environments would either foster or minimise the effect that intrinsic motivation would potentially have on their psychological detachment levels. Future studies should also explore the power of self-efficacy in moderating the supposed effect between intrinsic motivation and psychological detachment. Previous studies have found causal links between perceived competence with a task and how inherently motivated the person is to engage in such tasks (Blanck, Reis, & Jackson, 1984; Deci et al., 1991). These insights suggest that intrinsic motivation is a complex construct that could have varying and fluctuating links to psychological detachment with many moderators and mediators influencing the relationship.

The positive relationship between intrinsic motivation and technology use, may also be a more multifaceted relationship requiring further research into there being potential moderators and or mediators in the relationship. For example, a potential moderator may be the type of work that is engaged in by the academic employee which would naturally determine whether technology was used for its completion or not. Marking exam papers hardly calls for the use of technology to get the work done. Moreover, individual's preference for using technology to complete their work could also be explored. An academic employee may be intrinsically motivated, yet not be technologically savvy or in favour of using various technological devices and platforms to get their work done. This would naturally lead to using less technology for the completion of their work activities. It should also be noted that intrinsic motivation was the only individual differences construct of the academic employee that was incorporated in the study. Therefore, further research should be conducted as to how other individual differences variables of the academic employee could be incorporated in to the psychological detachment and burnout structural model.

Another recommendation for future research could be to test this study's structural model longitudinally (over time). Moreover, given that this study made use of PLS Methodology, feedback loops were not able to be incorporated in the current structural model. Feedback loops could provide valuable insights into how psychological detachment influences burnout over time. Therefore, as a further recommendation it would make sense to replicate the model (with a few adaptations as suggested above), and test it longitudinally with LISREL, which allows for feedback loops in order to establish whether loss or gain spirals are indeed supported through this model.

5.4 Limitations of the Study

Throughout the course of this study, a number of limitations have been noted. Firstly, a definite limitation of this study pertains to how information was gathered from the research participants.

This study utilised a self-report method. According to Sallis and Saelens (2015), self-reporting is one of the most popular methods of gathering data and is regarded as being extremely useful in gathering large amounts of information at a relatively low cost. Despite the benefits of self-administered questionnaires, it does allow for participants to provide information that would render the study vulnerable to response bias (Sallis & Saelens, 2015). Response bias would occur if the research participants responded to the questionnaires in a socially desirable manner, but also if they engaged in extreme and acquiescent responding (Paulhus & Vazire, 2007; Sallis & Saelens, 2015). According to van de Mortel (2008), social desirable responding is the tendency for research participants to convey a favourable image of themselves through providing particular responses to questionnaires. Extreme responding refers to the tendency of respondents to respond only to the extreme ends of the response scale (either 1 or 5); while acquiescent responding refers to the tendency of respondents generally agreeing with question statements while not considering the actual content of the question (Paulhus & Vazire, 2007).

A second limitation of this study includes the sampling technique that was utilised. That is, the non-probability convenience sampling method. This study also made use of a relatively small sample size of 148 academic employees at the participating university. Since the sample size was too small to perform traditional Structural Equation Modelling (SEM) with LISREL; the Partial Least Squared approach was used instead (Hair et al., 2006). The latter method more accurately estimates parameters in smaller sample sizes. However, despite using an approach that caters to a smaller sample size, both the sampling method and size of the sample strongly suggest that the results of the study cannot be generalised to the broader South African public. Future studies focussing on the determinants of psychological detachment and its link to burnout should thus use much larger samples of research participants, while also critically considering the sampling method that is chosen for future studies.

Finally, when analysing the demographic characteristics of the respondents of this study, it becomes apparent to note an additional limitation of the research. That is, 98% of the respondents were female. The results can thus be considered to be gender based and biased. Despite this study's questionnaire holding gender-neutral questions; research has suggested that men and women perceive situations differently; with women generally perceiving their school, friend, and work scenarios to be more stressful than men (Day & Livingstone ,2003; McKean, West & Russo, 2000). According to Roxburgh (1996) when men and women are faced with identical stressors, they can have differential perceptions as to the degree of stress the stressor elicits. Given that many of this study's questions centred on topics related to stress

(for example, work pressure); there would have been more varied results if more men were to have participated in the study.

5.5 Managerial Implications

The present study focussed on discovering the determinants of psychological detachment and its link to burnout. It was argued that by better identifying and understanding the determinants of psychological detachment, such variables can be manipulated, controlled and managed within work place settings so as to prevent and reduce the presence of burnout amongst academic employees. With the rate of burnout increasing amongst South African educators and teaching staff; practical solutions need to be created and implemented in such environments (Reddy & Poornima, 2012). Insight into psychological detachment and the variables that influence it, could provide institutions and larger organisations with an alternative approach and perspective as to how to manage the burnout phenomenon. Based on the results of the current study, this section will provide and explore managerial implications of this research.

The present study and its focus on work-home segmentation preferences produced insightful information as to how employees should manage their work and home life strategies in the goal of achieving psychological detachment. Through statistical analysis it was subsequently shown that the more individuals favour, and ultimately engage, in separating their work and home lives; the more successful they will be in experiencing psychological detachment. Such individuals would also be less prone to experiencing burnout if such a strategy were to allow them to mentally distance themselves from work in the long-term. Educational institutions should, through actively generating and finding useful insights such as this, ensure that this information is shared amongst employees. Work-home segmentation strategies should be actively encouraged in the working culture of organisations and institutions in order make employees aware that such practices can be easily embraced and used to their long-term well-being benefit. The intricate interplay between how work-home segmentations strategies influences technology use and psychological detachment can also be communicated. Awareness could be generated through various platforms - whether it be through actively sharing insights in meetings, broader online messages (such as e-mails) and through implementing consistent burnout seminars that introduce new burnout prevention information and coping methods. Ultimately, if organisations are to be become proactive in preventing the burnout phenomena, they need to evolve into a research, learning and sharing platform which could actively improve employee’s strategies as how to manage their health and well-being.

This would mean re-wiring organisational cultures to make the “sharing” of well-being insights a priority.

The variable of “recovery” was also proven to be an essential process in the psychological detachment and burnout linkage. The benefits of psychological detachment would only exist if the individual engaged in activities that made them feel recovered. The state of being recovered for the purposes of this study included feeling mentally refreshed and filled with new energy in the mornings before work (Sonnentag & Kruel, 2006). The managerial implications for addressing employees’ state of recovery is very much tied to encouraging people to take on the strategy of work-home segmentation principles, but also encouraging activities that would allow each individual to feel recovered after each full day of work. Work cultures should actively and openly encourage employees to finish work at reasonable hours so that they would have enough time each day to relax and focus on other areas of their lives Ultimately organisations and institutions need to have cultures centred around health and well-being that would actively encourage employees to embrace work-life balance as well as healthy personal routines that would enable people to recover and replenish their resources.

The variable of work pressure, compiled of both time pressure and workload, was also shown to be an important determinant in the nomological network of variables linked to psychological detachment. Work pressure is a well-known significant source of stress in academic institutions and organisations (Barkhuizen et al., 2013). According to Seeth (2017), South Africa has recently experienced a rapid increase in the application of students at tertiary institutions, with the number of students at each university significantly rising each year. Queries into students attaining free education in the future could further influence the work load and external pressures faced at academic institutions and their employees in South Africa (Seeth, 2017). On the basis of external pressures facing universities and higher educational systems in South Africa, it becomes more challenging to find useful suggestions as to how work load can be effectively managed in these environments. In order to encourage employees to psychologically detach from their work while they are experiencing high work pressures; stress-management training at an individual and organisational level would need to be encouraged (Bubb & Earley, 2004). According to Bubb and Earley (2004), this could include the creation of support systems in the work environments - whether this may be in the form on-site counsellors or the creation of small self-help groups. At an organisational level, an empathetic ethos and culture should be developed in order to foster the supporting mechanisms provided by the university or educational organisation (Bubb & Earley, 2004). Educational organisations should also focus on staff development which incorporates stress

management. In this way, the coping resources of the staff members could be developed over time.

5.6 Conclusion

The purpose of this study was to develop and statistically assess a nomological network of latent variables that would represent one approximation of the complex and underlying relationships between the determinants of psychological detachment and its link to the construct of burnout. It was hoped to discover what influences the process of psychological detachment in order to better help guide burnout prevention endeavours amongst academic employees. The underlying theoretical foundation of the study was based on the Conservation of Resources theory (COR) which lead to a greater understanding on the link between psychological detachment, recovery and burnout. In-depth investigation of literature studies on psychological detachment and the factors that influenced the construct led to the inclusion of various determinants. These included technology, flexible work arrangements, work-home segmentation preferences, acute fatigue/exhaustion, work pressure and intrinsic motivation. After formulating and statistically testing 12 hypotheses; it was found that seven of these hypotheses were shown to be statistically significant. In all, the results revealed that psychological detachment predicted recovery, which in turn predicted burnout. Moreover, work-home segmentation preferences and work pressure were found to be direct predictors of psychological detachment. Both variables were also shown to be moderators. Work-home segmentation preferences statistically significantly moderated the relationship between technology use and psychological detachment; while work pressure significantly moderated the relationship between exhaustion/acute fatigue and psychological detachment. The results further revealed that there were no significant direct effects found for intrinsic motivation on technology use; intrinsic motivation on psychological detachment; flexible work arrangements on technology use and technology use on psychological detachment. These findings provide further evidence and validation to studies focussing on how burnout can be reduced through understanding the importance of psychological detachment.

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APPENDIX A: EHICAL CLEARANCE APPROVAL

UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

APPROVAL NOTICE
New Application

07 August 2017

Project number: SU-HSD-004669

Project title: The Development of a Psychological Detachment and Burnout Structural Model for Academics.

Dear Amber Hanly

Your new application received on 11 May 2017 was reviewed by the REC: Humanities and has been approved.

Ethics approval period: 07 August 2017 – 06 August 2020

Please take note of the General Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

If the researcher deviates in any way from the proposal approved by the REC: Humanities, the researcher must notify the REC of these changes.

Please use your SU project number (SU-HSD-004669) on any documents or correspondence with the REC concerning your project.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

FOR CONTINUATION OF PROJECTS AFTER REC APPROVAL PERIOD

Please note that a progress report should be submitted to the Research Ethics Committee: Humanities before the approval period has expired if a continuation of ethics approval is required. The Committee will then consider the continuation of the project for a further year (if necessary)

If you have any questions or need further help, please contact the REC office at cgraham@sun.ac.za.

Sincerely,

National Health Research Ethics Committee (NHREC) registration number: REC-050411-032.
The Research Ethics Committee: Humanities complies with the SA National Health Act No.61 2003 as it pertains to health research. In addition, this committee abides by the ethical norms and principles for research established by the Declaration of Helsinki (2013) and the Department of Health Guidelines for Ethical Research: Principles Structures and Processes (2nd Ed.) 2015. Annually a number of projects may be selected randomly for an external audit.

Clarissa Graham

REC Coordinator: Research Ethics Committee: Human Research (Humanities)

APPENDIX B: INFORMED CONSENT FORM

UNIVERSITEIT•STELLENBOSCH•UNIVERSITY
jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY

CONSENT TO PARTICIPATE IN RESEARCH

Title of the Research Project: Development of a Psychological Detachment and Burnout structural model for academics.

You are asked to participate in a research study conducted by Amber Hanly and Prof G Görgens from the department of Industrial Psychology at Stellenbosch University. The results of this study will contribute to the thesis of Amber Hanly. You were selected as a possible participant in this study because the focus of the study is on academic employees at a tertiary institution.

1. PURPOSE OF THE STUDY

The objective of this research study is to develop a structural model that depicts the determinants of psychological detachment and its ultimate link to the burnout phenomenon. More specifically, the study aims to enhance the empirical knowledge of how organisations can engage in measures that prevent the onset of the burnout experience through understanding and influencing the causes/mechanisms of psychological detachment. This study will specifically consider the effect of the following variables that determine/relate to psychological detachment and the burnout phenomenon: Daily Technology Use; Work-home Segmentation Preference, Flexible Work Arrangements, Intrinsic Motivation; Exhaustion/Acute Fatigue; Recovery and Work Pressure.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to complete an online questionnaire that should take ± 40 minutes to complete. You will need to have access to the Internet in order to complete the questionnaire.There are no right or wrong responses for the questionnaire; we are merely interested in how you view yourself.

3. POTENTIAL RISKS AND DISCOMFORTS

This is a relatively risk-free study. The only potential risks and/or discomforts that could result from participating in this study include the time that is required to fill out the questionnaire and the potential discomfort of having to evaluate yourself. Filling out the questionnaire may make you think about things that you have to do on a daily basis, which you may not particularly enjoy. You should understand that none of this data will be shared with any person in a management position, and that you will not be required to write your name on the questionnaire. Moreover, you will also be asked to think about sensitive emotions/feelings/physical responses to your work as an academic employee (i.e. the extent to which you feel that there are excessive work pressures in your job that are having a negative impact on you emotionally/mentally/physically). Reflecting on your daily emotional experiences (and the extent to which you are recovering from work) may cause some discomfort. If you experience any severe emotional distress during the completion of the questionnaire, please be advised that you have the right to discontinue participation at any stage, or decide not to complete some of the items in the questionnaire. Please note that when completing the online questionnaire, the system does not allow you to skip a question, but if you feel you want to discontinue, you may at

any stage. The data will only be utilised for research purposes and no consequences, positive or negative, will result from the findings.

In the event that you think that you might be suffering from burnout please contact the Employee Assistance Provider of the University, situated in the Wellness unit, for counselling and support services. The details for doing so can be found on the university website at the following link: http://www0.sun.ac.za/hr/wellness/af/programme/wop/

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

There are no direct benefits for you as an academic employee. However, it is hoped that the development of the psychological detachment and burnout structural model will add to the empirical knowledge base that currently exists. It is in enhancing the knowledge of psychological detachment that it is made more possible to engage in future organizational interventions for the academic employee, learning institutions, organisations and society as a whole.

5. PAYMENT FOR PARTICIPATION

You and/or your tertiary institution to which you belong will not receive payment for participating in this research study.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by restricting access to the data to the researchers (Amber Hanly and Prof Gina Görgens), by storing the data on a password-protected computer, and by only reporting aggregate statistics of the sample. The results of this study will be distributed in an unrestricted electronic thesis, as well as in an article published in an accredited scientific journal. Not one of these publications will reveal the identity of any research participant (academic employee). The identity of the tertiary institution to which the employee belongs will also remain confidential.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Amber Hanly (073 350 1173 or 16977793@sun.ac.za)or Prof Gina Görgens (ekermans@sun.ac.za / 0218083596)

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development, Stellenbosch University.

CONSENT FORM (please tick the appropriate box):

I hereby consent to voluntarily participate in this study, and therefore I agree that my data may be integrated into a summary of the results of all the questionnaires without identifying me personally. ☐

I don't want to participate in this study. ☐
